

SEPTEMBER 1958

# *National* **SAFETY NEWS**

A NATIONAL SAFETY COUNCIL PUBLICATION



**SELECTION, TRAINING, PLACEMENT**

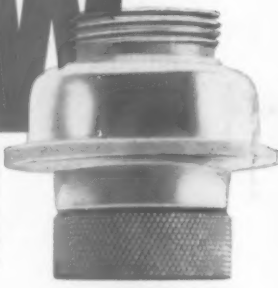
*Policies and Practices in the Automotive Industry*

**TRAGIC FACTS**

*About 95,000 accidental deaths in 1957*

# NEW

**NEW External Check Valve** prevents moist exhaled air from entering the canister. Seals out moisture when mask is in storage. Closes automatically after inhalation. Threads at both ends permit easy, positive connection between canister and breathing tube.



**These 3 improvements in M-S-A "All-Service"® Gas Masks provide a new standard in wearer-confidence and lower canister operating costs**

New M-S-A Model "S" All-Service Gas Masks now employ three of the most modern scientific safeguards for general respiratory protection. The brief captions tell how these new features work to provide built-in safety factors and help avoid the expense of premature canister replacement. You'll find them profitable reading.

MSA also furnishes handy conversion kits to convert older model M-S-A All-Service Masks to the new type. Ask the MSA man for a demonstration, or write us for descriptive literature.

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201 North Braddock Avenue, Pittsburgh 8, Pennsylvania

#### MINE SAFETY APPLIANCES CO. OF CANADA, LTD.

500 MacPherson Avenue, Toronto 4, Ontario

At your Service: 82 Branch Offices in the United States and Canada



## M-S-A® ALL-SERVICE Model "S" WINDOW-CATOR® CANISTER UNIVERSAL GAS MASK CANISTER

BUREAU OF MINES  
APPROVED

This  
INDICATOR →  
section  
changes  
color



See Approval Label  
On Reverse Side

Pat. No. 2,332,333 U. S. Patents 2,332,333

1. THIS WINDOW INDICATOR APPLIES TO ALL TYPES OF PROTECTION AFFORDED AGAINST CARBON MONOXIDE.
2. DISCARD CANISTER when color of any section of WINDOW-CATOR SECTION approaches the color of the REFERENCE SECTION. Never use canister when INDICATOR SECTION is pink or less blue than REFERENCE SECTION.

### IMPORTANT INFORMATION—READ CAREFULLY

Comparison of the colors of the INDICATOR and REFERENCE sections should be made, when practicable, in daylight or under daylight-type lamps. Light from incandescent light bulbs and battery-operated cap lamps accentuates the blue color of the INDICATOR section. Canisters observed under these lighting conditions should be discarded when the color of the INDICATOR section is still somewhat bluer than that of the REFERENCE section.

This Side of Canister Should Face Outward

Discarded—  
Minutes Remarks

MINE SAFETY APPLIANCES CO. Pittsburgh 8, Pa.  
ESTD 1914

**NEW Window-Cator Canister** is approved by U.S. Bureau of Mines. Contains a window with two color panels which tell you when the canister is or is not effective against carbon monoxide. This enables you to eliminate the timer and avoid premature canister replacement.



**New Model "S" All-Service Gas Mask**, complete with Window-Cator Canister, External Check Valve and M-S-A Clear-tane Speaking Diaphragm gives fire-fighters an extra measure of confidence in emergencies. Extra large lenses assure unobscured vision.

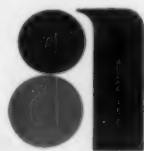
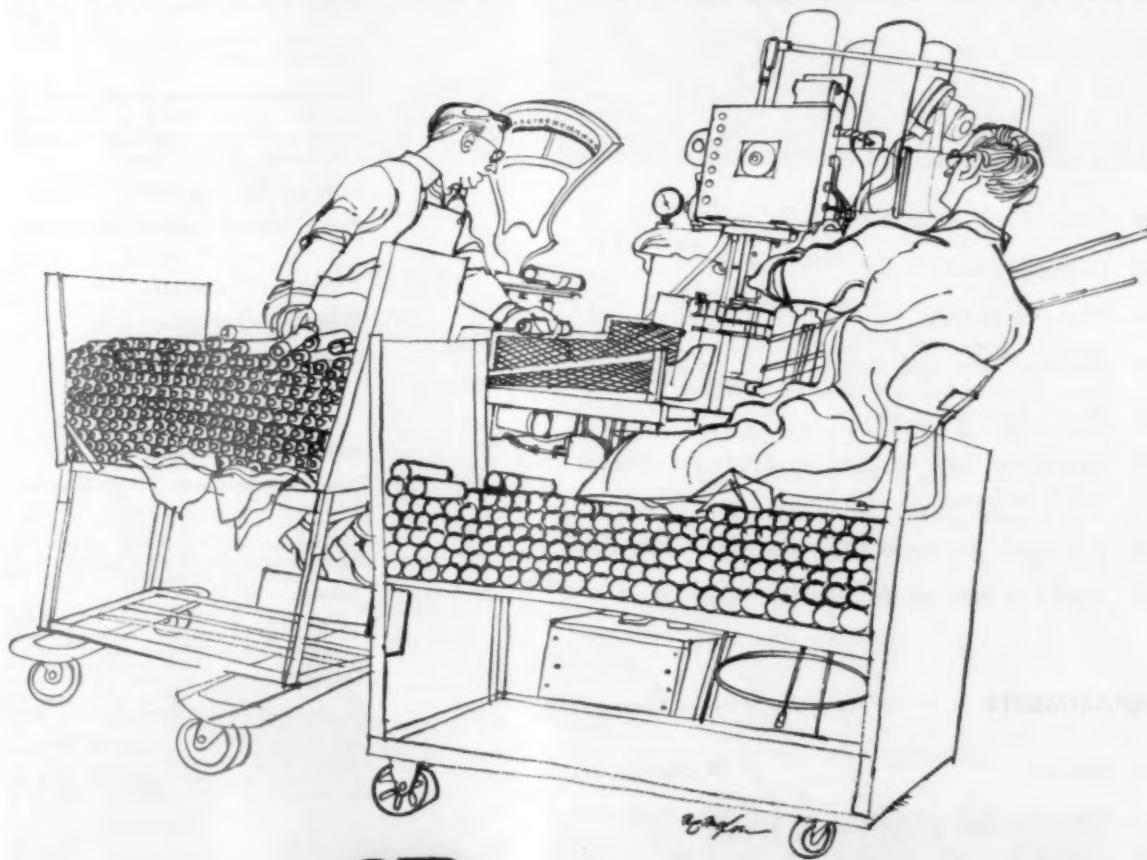
**NEW Plastic-coated Tape Seal** can be removed quickly and easily when mask goes into service. Can be replaced repeatedly in bottom of canister when mask is in storage. Helps preserve the canister when not in use.

Circle Item No. IFC—Reader Service Card

# PEOPLE ARE THE REAL DIFFERENCE BETWEEN PRODUCTS

Fire never gives you a second chance. Extinguishing equipment must work the first time, every time.

That's why Ansul manufacturing people are so important to your fire protection program. Their rigid control of every manufacturing step is your assurance that Ansul fire extinguishing equipment is always ready for action. Write us. We'll be pleased to tell you more about Ansul fire extinguishing equipment and about our unique Fire Protection Service Plan.



**ANSUL**

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FIRE EXTINGUISHING EQUIPMENT / INDUSTRIAL CHEMICALS / REFRIGERATION PRODUCTS / NATIONAL DISTRIBUTORS OF "FREON" REFRIGERANTS

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Circle Item No. I—Reader Service Card

# National SAFETY NEWS

A NATIONAL SAFETY COUNCIL PUBLICATION

Vol. 78, No. 3

SEPTEMBER 1958

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## National Safety Council

Chartered by the Congress of  
the United States



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## THE COVER

A truck cab leaves the assembly line  
to go through cleaning before it en-  
ters the paint line. (Photo by Inter-  
national Harvester Company)

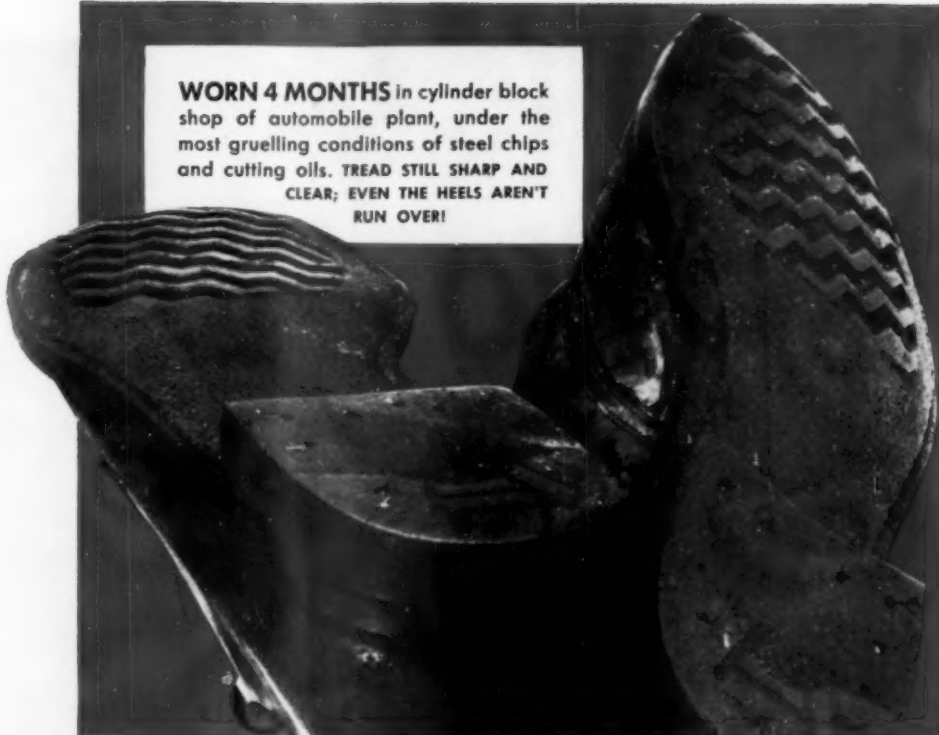
37,400 copies of this issue were printed

National Safety News, September, 1958



You  
never  
saw  
a sole  
wear  
like  
this!

**WORN 4 MONTHS** in cylinder block shop of automobile plant, under the most gruelling conditions of steel chips and cutting oils. TREAD STILL SHARP AND CLEAR; EVEN THE HEELS AREN'T RUN OVER!



*new*

**Lehigh  
MIRAGUM**

**"An amazing performance"**

said the shop foreman. Every man in the department who saw this test-pair bought a pair for himself. *And every man is now steel-toe-protected!* Now three styles to choose from with this outstanding, wear-resistant new sole material. Try them in your own plant wherever men can't keep up with sole wearout.



**Lehigh**  
**SAFETY SHOE COMPANY**  
*Emmaus, Pa.*



## Getting ready for some big action

Here's a whopping big Torpedo sling on a job handled by a Midwestern construction firm. The sling is about to tackle a strenuous assignment—helping lift a heavy steel bridge member.

Bethlehem Torpedoes in the larger sizes have many advantages for lifts of this kind. They are made entirely of Purple Strand wire rope, Bethlehem's finest grade. This gives them tremendous strength, superior toughness, and high resistance to bending fatigue. And there's dependable strength at the eyeloops, too. The loops are formed with a rolled or Flemish eye, and the holding power is

increased by thick steel collars with a tight, unyielding grip.

Standard Torpedoes are available in sizes from 1/4-in. to 2-in. diam. But if your needs are better served by other types of slings, Bethlehem can easily furnish them—in any size and length you wish. Braided models, grommets, bridles, and special assemblies—Bethlehem makes them all. Many are available from distributor stocks. Our nearest sales office will gladly give you complete information.

**BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.**

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. Export Distributor: Bethlehem Steel Export Corporation

# BETHLEHEM STEEL



Circle Item No. 3—Reader Service Card

National Safety News, September, 1958

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... puts new safety into  
production cutting!

The new De WALT Imperial is designed with extra safety features to conform with new industry standards. Push-button power elevation...power feeds...power brake...24 volts power circuit control...direct drive motor power...and other innovations...help operators turn out more micro-accurate work with confidence and safety. Write for brochure.

**DeWALT DIVISION**  
American Machine & Foundry Company  
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Lancaster, Pa.



GYRO BALANCED POWER

# DeWalt® Imperial

Cutting Machine Tool  
takes you into the great  
new production era of

## SAW DYNAMICS

## Depreciation

**W**HENEVER business begins to slip, management quite naturally looks around for places to cut costs. It's an unusual organization that doesn't have some fat that can be trimmed. Every department can see plenty of opportunities in other departments.

The safety department, unfortunately, is often one of the first to feel the pinch. Certainly, it is management's duty to review periodically all activities to make sure the company is getting its money's worth. The safety department shouldn't be any exception.

But some of the reasoning behind the retrenchment is decidedly unsound. The company's safety record has been good; supervisors and men are thoroughly safety-minded. The program ought to be able to coast along until business picks up.

That argument ignores the factor of depreciation—something that affects both men and machines. Equipment wears out, and constant inspection, repair and replacement are needed. But, even though the plant should be shut down and not a wheel turn for a year, it would need a thorough overhauling before getting back into production. Rust, corrosion, and dust, as well as the wear and tear of actual use, cause deterioration.

People deteriorate, too. The ring champion of today may be a bum tomorrow. The pennant-winning ball club, way out in front this season, may land in the second division next year. (The New York Yankees seem to be an exception). Aging muscles and dimming batting eyes may account for a large part of the decline, but mental factors must be considered too.

Nothing depending on so variable and fallible an element as human nature can be considered permanent. That goes double for accident prevention. Complacency can be fatal in any line.

A safety program that has reached the point where it is getting real results still needs constant energizing from management as well as from the safety director. People develop physical disabilities that need medical service. They become lax and inattentive without constant stimulation and supervision.

Hostility isn't the greatest obstacle to effective safety work; it's inertia. You can't get anywhere pounding sand.

Years ago unthinking folks used to say, "You safety people and the insurance companies don't want 100 per cent safety. You'd be out of jobs."

Nobody in the safety field is worrying about that. The depreciation that attacks human beings and inanimate things won't let us eliminate accidents.

## NATIONAL SAFETY COUNCIL OFFICERS, 1957-58



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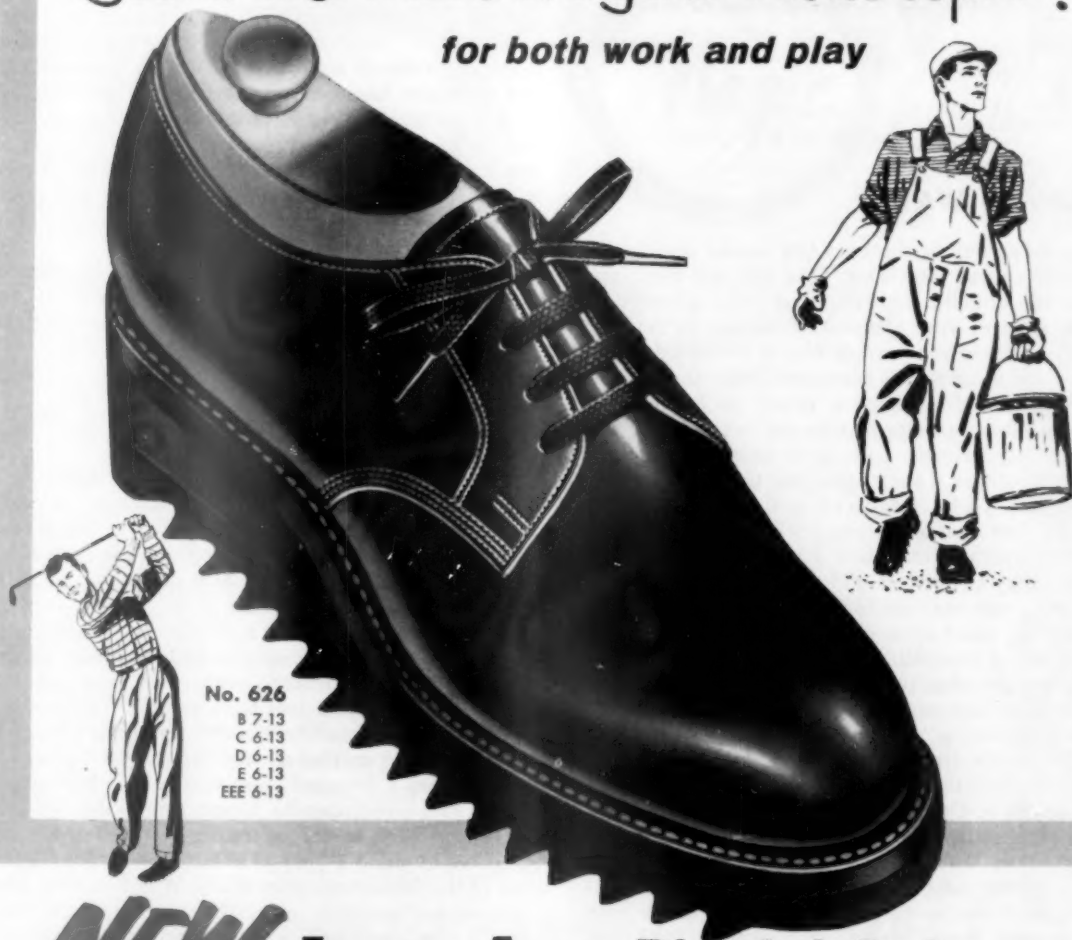
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Seems like most everyone wants a pair!  
for both work and play



## NEW Iron Age Ripple® Sole

Steel Toe

## SAFETY OXFORDS



Note the deep, lateral grooves in these Ripple soled safety shoes. They absorb shock, add spring to the step, conserve energy. And the multiple, non-skid Vee's contribute to safety by gripping wet, slippery surfaces.

Nothing in decades has so captured the public's imagination as "floating foot" Ripple Soles. Now Iron Age makes it possible for your employees to satisfy their wants with this distinctive new Iron Age safety shoe, and get double duty wear, both at work and at play.

This dressy black Iron Age safety oxford is as eye-appealing as it is comfortable. There's no better way to increase your coverage. Just stock and display Iron Age No. 626—the Ripple Sole safety oxford with the custom-crafted look and wearability to match. Let us have your stock order today.

**Iron Age** DIVISION



**H. CHILDS & CO., INC.**  
Pittsburgh 12, Pa.

# THE SAFETY VALVE



Nothing human is alien to me

—TERENCE

## THE UNITED WAY

SOME EVENING during the next few weeks somebody is going to call at your door. That call will cost you money—the amount depending on your conscience and the state of your personal finances. In return, you'll get a little red feather and a receipted card.

Now a lot of us groan inwardly at the thought of another touch. Herb Brown, editor of Kiplinger's *Changing Times*, admits that he did . . .

"Then," says Herb, "I got to thinking how much worse it would be if they asked me to do the soliciting. For then I'd have to work and give.

"Really, the men and women who do the work on these fund-raising campaigns are downright heroes. What do they get out of it?

"Nothing—except the opportunity to wear out shoe leather, meet some old sourpusses at the door, sometimes get insulted. Of course, they do get some satisfaction out of getting a big job done, and they do meet a lot of nice people, too."

I know—having rung doorbells on Operation Shakedown for the United Fund, the Red Cross, the church, and the Boy Scouts, though I never felt heroic about it. On these chores I've met more nice people than sourpusses, and I got to know some of my neighbors better.

Some of the people in obviously modest circumstances shell out more generously than those with big, new cars. Some hand the canvasser a buck just to get rid of him. They wouldn't raise the ante no matter how many causes were represented in the drive. That has been the reason for reluctance of organizations to pool their efforts in a single drive.

Administrative costs in the average community campaign are only four cents for every dollar collected. The alternative to the success of these drives is state charity, and that belongs in the litany of things to be delivered from. It involves bureaucracy, politics, and a much-higher overhead.

## REPORT FROM INDIA

"CAPTAINS OF INDUSTRY are slowly but surely realizing that the basic sin of industrial development in the past was that they forgot the human being and his human needs."

That quote from the annual report of Tata Industries' Department of Industrial Health will give some idea of the broad concept of industrial health held by this unique organization. This yearly report from India is refreshing in a world made uneasy by

snarling racists and demagogues.

Tata Industries, one of the world's great industrial empires, has contributed immensely to the material progress of India, and through its industrial and public health activities has furthered the spiritual growth and physical welfare of millions of people.

Now in its twelfth year, the program has made amazing strides in spite of the handicaps of tradition and primitive background. Its guiding spirit is Dr. H. P. Dastur, a physician of international reputation and a truly dedicated man. Undoubtedly, it is due largely to his influence that industrial medicine in India has a spiritual flavor which is too often lacking in comparable programs in the western world.

And Dr. Dastur is fortunate in having the wholehearted support of the Tata family who have become famous for their philanthropies as well as for their business success.

## TOWARD A BRIGHTER WORLD

FREIGHT CARS are getting away from their traditional barn red, says Jim Lyne, editor of *Railway Age*. They're going in for brighter colors and larger and more attractive lettering that you can make out a long way off. Jim admits he's partial to paint as a public relations instrument.

Industry has been using it a long time—inside and out. It's one of those things you have to accept pretty much on faith—difficult to evaluate by any material yardstick. But plants that have gone in for functional and decorative color are convinced it pays through its influence on employees and the public. One never knows when a prospective customer or a high-grade future employee may be impressed.

Getting back to the railroads, some of their stations could stand a coat of paint. One of my memories of the Rhineland after World War I was the trim stations and grounds, even after four years of war. And a few years ago, while touring downstate Illinois, I noticed a station with a fresh coat of sparkling yellow paint—like a daffodil in spring. I believe the town was Havana.

Some suburban stations in the Chicago area could stand a little renovating. I know the roads aren't making any money out of the commuters, but they might consider Mr. Lyne's ideas on public relations.

Now I'm in no position to look down my nose at the railroads. Crestfallen Manor is long overdue for a coat of paint, and I've been holding back for the same reason as the railroads.

In carrying out Mr. Lyne's recommendations for more colorful freight cars, the railroads ought to get together and choose harmonious colors. It simply wouldn't do to have a Santa Fe car painted in a color that would fight with a Pennsy vehicle coupled to it.

Carman Fish

## COMPARE ITS BIG SIZE



The white space on this page is exactly the size of the Magic sheet; over 50% larger and our paper costs you less. It has twice the tearing strength. Loaded with sparkle-power, it polishes—and protects—as it cleans crystal-clear.

Compact Self-Mounting Dispenser has no moving parts. No drilling. No screws. Just stick it to the wall.

Magic Heavy-Duty Cleaning Station is for heavy grit areas or where anti-fog protection is needed. Magic Lens Cleaning & Anti-Fogging Fluid is pressure-packed. 1,400 applications per can. One Magic can equals 4 old-fashioned bottles. That's the first saving. No pump. Nothing to refill.

Indestructible Dispenser locks can in place. No pilferage possible. Releases each sheet of paper 1-by-1, not in bunches; greatly reducing waste.

Magic Heavy-Duty Paper, not silicone treated, is our superb wet-strength tissue. No scratching on plastic, and no lint. Again, you save money.

Ask to exchange Magic for your old cleaning stations FREE, or order anew—now! Wire or write us or your Safety Jobber today!

Compare the Quality, the Size and the Price and Buy.

Magic Lens Tissue, 6 refills	per carton, \$8.40
Magic Lens Tissue Dispenser	each, \$2.50
Magic Heavy-Duty Paper Dispenser	each, \$5.95
Cleaning & Anti-Fogging Fluid, Twelve 12 oz. cans	per carton, \$12.50
Magic Heavy-Duty Paper, 18 giant refills (760 sheets ea.),	per carton, \$11.60
All prices F.O.B. shipping point	

## Exchange all your other Stations for Magic FREE



**Magic Lens Tissue**  
America's leading  
Eye-aid for  
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Science's answer to  
Grit, Fog, and Grime.



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**NATIONAL  
SAFETY COUNCIL**

425 N. Michigan Ave.  
Chicago 11, Ill.

## COMING EVENTS



in the  
safety field

### Sept. 12-14, Glenwood Springs, Colo.

Governor's 1958 Teen-Age Traffic Safety Conference. Colorado Highway Safety Council, Room 14, State Museum Building, Denver 2, Colo.

### Sept. 14-19, San Francisco, Calif.

Annual Meeting of American Association of Motor Vehicle Administrators (Fairmount Hotel). AAMVA, 912 Barr Building, Washington 6, D. C.

### Sept. 16-18, Cleveland, Ohio

Twentieth Annual Ohio State Safety Conference (Pick-Carter Hotel). H. G. J. Hayes, secretary-treasurer, Ohio State Safety Council, 8 E. Chestnut St., Columbus 15, Ohio.

### Sept. 16-20, Copenhagen, Denmark

Fourth International Study Week in Traffic Engineering. World Touring and Automobile Organization, 12 Chesham Pl., London SW1, England.

### Sept. 18-19, Rockland, Maine

Thirty-first Annual Maine State Safety Conference (Samoset Hotel). Arthur F. Minchin, secretary, Department of Labor and Industry, State House, Augusta, Maine.

### Sept. 21-23, Copenhagen, Denmark

1958 International Road Safety Congress. World Touring and Automobile Organization, 12 Chesham Pl., London SW1, England.

### Sept. 21-24, Lafayette, Ind.

Third National Conference on Driver Education (Purdue University).

### Sept. 22-24, White Sulphur Springs, W. Va.

The Material Handling Institute, Inc. (The Greenbrier). Hanson & Shea, Inc., 1 Gateway Center, Pittsburgh 22, Pa.

### Sept. 24-26, Northampton, Mass.

Freeway operations seminar. Sponsored by Institute of Traffic Engineers. Roger T. Chandler, City Traffic Engineer, Providence, R. I., or Institute of Traffic Engineers, 2029 K St., N. W., Washington, D. C.

### Oct. 1, Washington, D. C.

Seventh Annual Commissioners and Governors Conference on Metropolitan Washington Traffic Problems (Sheraton-Park Hotel). Anthony L. Ellison, Exec. Dir., Room 1020, Municipal Center, Washington 1, D. C.

### Oct. 9-10, Chicago

Ninth Annual National Noise Abatement Symposium (Hotel Sherman). Hale J. Sabine, Physics Research Dept., Armour Research Foundation, 10 W. 35th St., Chicago.

### Oct. 12-17, New Orleans, La.

American Transit Association (Roosevelt Hotel). ATA, 292 Madison Ave., New York, N. Y.

### Oct. 20-23, Philadelphia

International Municipal Signal Association (Sheraton Hotel). IMSA, 130 W. 42nd St., New York, N. Y.

### Oct. 20-24, Chicago

Forty-sixth National Safety Congress and Exposition (Conrad Hilton Hotel). R. L. Forney, secretary, National Safety Council, 425 N. Michigan Ave., Chicago 11.

### Oct. 26-31, Mexico City, Mexico

Third World Meeting of International Road Federation (Hotel Del Prado and Secretary of Communications Building).

### Nov. 3-6, Philadelphia

Third National Industrial and Building Sanitation Maintenance Show (Convention Hall). Leonard S. Rogers, Orkin Expositions Management, 19 West 44th St., New York 36.

### Nov. 5-6, Columbia, S. C.

1958 South Carolina Accident Prevention Conference. Fred Derrick, Jr., sec.-treas., South Carolina Industrial Commission, P. O. Box 539, Columbia, S. C.

### Nov. 11-13, Miami Beach, Fla.

Twenty-eighth Annual Meeting of Institute of Traffic Engineers (Deauville Hotel). David M. Baldwin, executive secretary, 2029 K St., Washington 6, D. C.

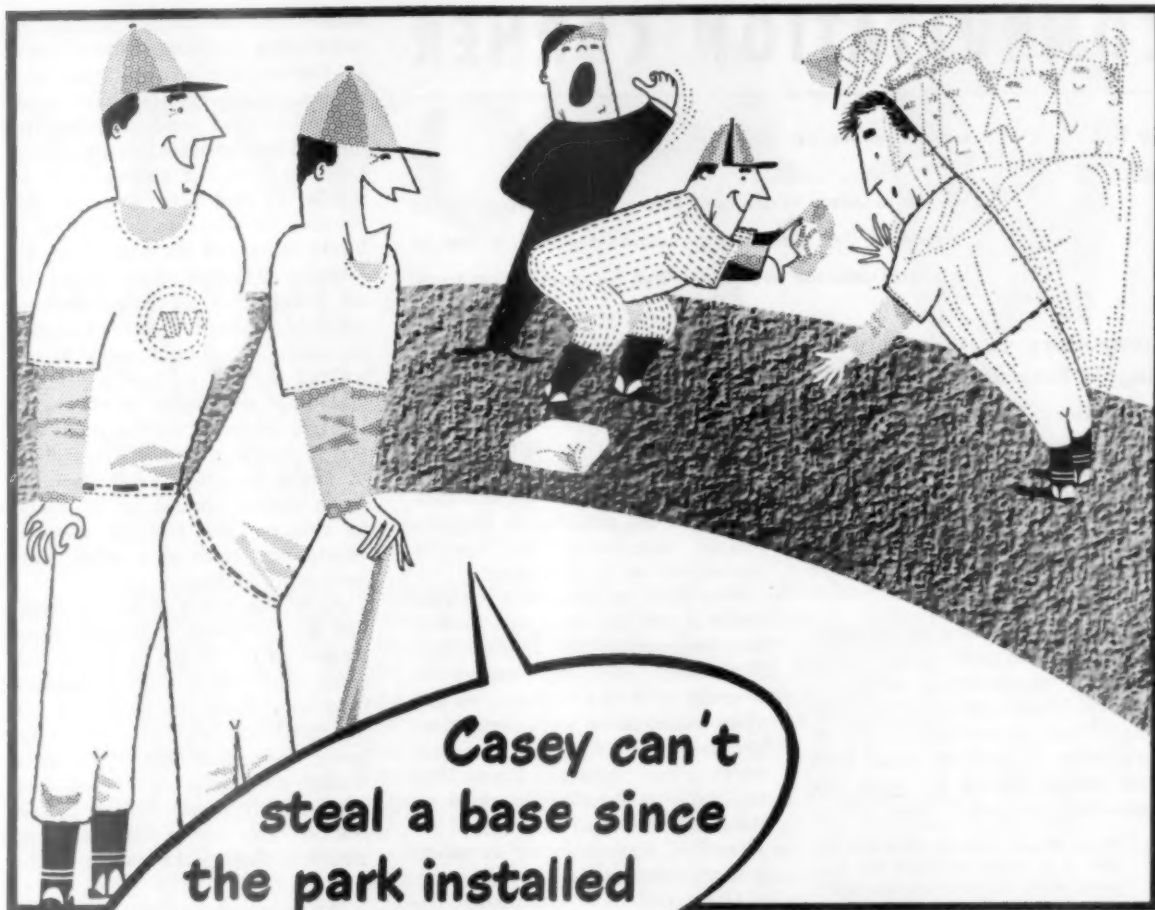
### Nov. 28-Dec. 5, San Francisco, Calif.

Annual Meeting of American Association of State Highway Officials (Sheraton-Palace Hotel). AASHO, National Press Building, Washington 4, D. C.

### Nov. 30-Dec. 5, New York

American Society of Mechanical Engineers, Annual Meeting. Statler and Sheraton-McAlpin Hotels). ASME, 29 W. 39th St., New York 18.





**Casey can't  
steal a base since  
the park installed  
A. W. ALGRIP!**

Unfair advantage . . . perhaps, but Casey will never set a new base-stealing record in this park. Now his sliding days are over! A.W. ALGRIP eliminates sliding or slipping wherever used . . . especially where sliding or slipping is never welcome . . . in *your* plant.

A.W. ALGRIP Rolled Steel Floor Plate provides super-safe footing under the most hazardous slipping conditions—on flat or even inclined surfaces.

A.W. ALGRIP Rolled Steel Floor Plate is made by a patented process in which a grinding wheel type abrasive is rolled—*not coated*—to a controlled depth, as an integral part of tough steel plate. Wear merely exposes more abrasive . . . safety lasts for the life of the installation.

Check your plant for slipping hazards and watch Accident Rates and high Insurance Costs "slide." Use A.W. ALGRIP as an independent flooring or as flooring overlay. Send the coupon for A.W. ALGRIP information, today.

## **A.W. ALGRIP ABRASIVE ROLLED STEEL FLOOR PLATE**

*ALGRIP—approved for safety by Underwriters' Laboratories*

### **ALAN WOOD STEEL COMPANY**

Censhochocken, Pa.

Please send A.W. ALGRIP Booklet AL-E27

Name \_\_\_\_\_

Title \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

Zone \_\_\_\_\_

State \_\_\_\_\_



### **OTHER PRODUCTS:**

A.W. SUPER-DIAMOND economy rolled steel floor plate—Plates—Hot and cold rolled sheet and strip—(Alloy and Special Grades)

Circle Item No. 7—Reader Service Card

# CONSULTATION CORNER

By L. C. Smith, Industrial Department, NSC

Got a problem in accident prevention or occupational hygiene? Questions are answered by mail, a few of general interest being selected for publication here.

## Compulsory vs. Voluntary Goggle Program

**Question:** We have had some discussion lately about an eye protection program and the pros and cons of compulsory and voluntary goggle programs. We would like to get information concerning the experience of companies in eye protection programs.

**Answer:** The following information came from participants in the Council's occupational safety inventory. Their replies to the question, "What reductions in eye injury costs or accident rates have been accomplished by your eye protection program?" are:

1. From 29 eye cases in 1953 to 9 in 1957, 5 of which revealed the injured were not wearing eye protection at the time of injury.
2. From about 12 to 15 cases per year to no cases last year.
3. Saved four employees' eyes in three years.
4. No disabling eye injury cases in 12 years.
5. Eye injuries reduced from 103 to 7 over a 3-year period.

From the above information it is apparent that eye protection programs do reduce eye injuries.

However, there is always a

problem of where should eye protection be worn and should it be a 100 per cent program or should it be on a voluntary basis.

In the rubber industry, 97 per cent of the companies that replied to our questionnaire on the subject make the wearing of eye protection mandatory for specific operations or departments.

One firm in Wisconsin inaugurated a 100 per cent eye protection program in 1950. Prior to that time they had experienced an average of 3 to 4 eye injuries per year. Also, there were many doctor cases and first aid cases involving eye injuries. From 1950 to 1957 this firm experienced no disabling eye injuries, but had replaced 67 broken lenses in safety glasses during that period.

Once you have established the need for an eye protection plan, the problem of making it compulsory or voluntary is primarily a selling job. Basically, you are selling eyesight, not goggles, and in this effort it is best to seek the cooperation of the employees at the very beginning. If a compulsory program is decided upon, all employees should be informed of the program well in advance of the starting date and they should be informed of the procedure for handling violations. Generally speaking, firms that have no plan to encourage or require employees to wear goggles where they are exposed to hazards have the least success with a goggle program.

## Welding in Confined Spaces

**Question:** We are concerned about the problem of fumes resulting from electric arc welding which is being done inside tank cars. Also, we would like information on the types of fumes emitted by different types of electrodes.

**Answer:** While many methods of controlling welding fumes, such as electrostatic precipitation and supersonic waves, have been tried, the safest and most successful method has been ventilation. However, in confined spaces such as inside a tank car, where the amount of toxic substances is likely to exceed the maximum allowable concentrations, supplied-air respirators or hose masks—with or without blowers—should be used. This would apply to the welder as well as to the helpers and other personnel in the tank.

Also, where a welder must enter a confined space through a manhole or other small opening, some means should be provided to remove the man in case of emergency, such as a safety harness with lifeline.

As to the types of fumes emitted by different types of electrodes—it is difficult to determine, since the fumes are dependent primarily upon the electrode being used and the type of metal being welded. Whether the electrodes are plain or coated also makes a difference. Base metals coated with tar, paint, lead, or zinc will change the nature of the fumes.

When clean carbon is welded with bare or coated carbon steel electrodes in large or well-ventilated areas, the fumes present no problem. Metals covered with cadmium, lead, mercury, zinc, or zinc-containing substances do emit fumes that may contain harmful substances. In such cases local exhaust ventilation or air-supplied respirators are necessary when working in enclosed places.



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"And when did you first discover the tank you were welding had gasoline in it?"

# two



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#70-EL-33



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Circle Item No. 8—Reader Service Card

# WIRE FROM WASHINGTON



By Harry N. Rosenfield

Washington Counsel, National Safety Council

A QUICKENED PACE in all legislation, including safety bills, accompanied the final days of the Congressional session.

**Industrial Safety.** The Senate Committee on Labor and Public Welfare favorably reported on S. 3290, to amend the Federal Coal Mine Safety Act to make it applicable to, and provide Federal inspection for, certain mines employing no more than 14 persons. (See "Wire," April 1958.)

The Bureau of Mines issued notice of proposed revision of procedures for testing and approval of multiple-shot blasting units of greater capacity. The Solicitor of the Department of the Interior ruled the Bureau of Mines had authority to revise existing regulations or to promulgate new ones affecting equipment in gassy coal mines whether previously certified as permissible or not, under certain conditions.

As a result, subject to such conditions, the Bureau could prescribe additional specifications for electrical face equipment previously ruled permissible. The Bureau of Mines issued its summary of preliminary injury statistics by major mineral industry for the years 1955 and 1956.

The Interstate Commerce Commission reported an improvement in the accident record of all line-haul, switching and terminal railroads. In the first three months of 1958 there were a total of 901 accidents, involving 35 deaths and 291 injuries, as compared with 1044 accidents, 52 deaths, and 195 injuries for the same period in 1957.

In the course of Congressional debate on the controversial H.R. 3, which would establish rules of interpretation governing questions of the effect of acts of Con-

gress on state laws, the bill's sponsors sought to answer the objections of railroad management and labor by asserting the bill would not affect the criteria with respect to, or the regulation of, safety devices and practices on interstate carriers. The House rejected an amendment which would exempt the railroad industry from the application of the bill.

The Atomic Energy Commission amended its standards for protection against radiation by forbidding licensees from treating or disposing of any licensed nuclear material by incineration without AEC approval.

The International Labor Organization issued a new edition of its booklet *Safety and Health of Workers*.

**Highway Safety.** H. J. Res. 221, which would grant Congressional consent to negotiate and enter into contracts for the purpose of promoting highway traffic safety (See "Wire," August 1958), was passed by the Senate and went to the President for approval. This is the first legislation to emanate from the Roberts Subcommittee that has progressed to the point of final enactment.

The media group of the Presi-

dent's Committee for Traffic Safety distributed a report of a privately-financed pilot research project which sought to ascertain whether mass communications actually motivate people to become safer drivers and, if so, to identify the most effective approaches.

The study found that, although mass communications can create awareness of the traffic problem and solidify or change people's attitudes, typical slogans like "Drive safely" have a negative effect and may even close their minds to safety communications. The findings also suggested the need for a new approach to, and revised techniques in, public safety education.

**Aviation Safety.** S. 3880, to create a Federal Aviation Agency, was passed by the Senate and also passed by the House in amended form. As adopted by the Senate, the bill would create an independent Federal Aviation Agency, under civilian administration, which would allocate and control all airspace, both civilian and military; make and enforce all air traffic rules; develop and operate a common system of air navigation facilities; and make

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## THE MONTH IN WASHINGTON

- Senate Committee reports favorably on Federal Coal Mine Safety Act amendment making it applicable to mines with 14 workers or fewer.
- Atomic Energy Commission forbids licensees from treating or disposing of nuclear material by incineration without AEC approval.
- President's Committee for Traffic Safety media group distributes research report on whether mass communication motivates safe driving.
- Department of Defense reports rate of military plane accidents is dropping for the third straight year.





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# news briefs

## Corrosion culprit caught

A series of pitted and corroded steam line flanges was traced to the type of gasket used. The gaskets were made with a base binder containing a chlorine compound. In contact with water or steam, the chlorine formed a corrosive acid. The flanges were corroded so badly they had to be re-machined or replaced.

## Top safety record

A safety record unequalled in any industry is that of the atomic energy industry. There have been only two radiation deaths in two-and-a-half billion man-hours worked under potential radiation exposure. The all-industry rate would result in 300 deaths for this many man-hours.

## Stop ignition sources

Electrically-operated machines such as water coolers and vending machines should be checked for sparking hazards before installation in areas where flammable and explosive vapors or dusts may be produced. Motors and arc-producing contacts are usually near the floor, where many flammable vapors collect.

## Quicksilver—quick loss

Usually, spilled materials are quickly cleaned up and forgotten. One spill that won't soon be forgotten is the large quantity of mercury that spilled aboard an air transport recently. The mercury got into the cracks and junctures of the structural parts, and exposed the metal to the corrosive action of the mercury. Some of the major structural components were removed and replaced. Cost—over \$100,000.

## Filters your smoke

A new type of smog-preventing smoke stack has been announced. A 300-foot-long pipe lined with rubber traps atmospheric contaminants.

## Half-million lives

Industrial safety programs have saved an estimated half a million lives and have prevented fifty million injuries in the past quarter of a century.

## Another man's poison

Laboratory employees who use lab glassware for coffee cups or as food containers are asking for a violent stomach upset, or worse. Some cases have been reported of these private coffee cups being switched by staff visitors, cleaning personnel, or fellow employees who do not know about the special use for the particular beaker in question.

## Air contamination watched

After every weapons "shot," the AEC takes samples of airborne dust at approximately 70 localities throughout the world, in addition to 46 stations in the United States. Soils are sampled on a world-wide basis, and samples of other materials such as milk and cheese, field crops and human and animal bones will be taken for analysis of their strontium-90 content.

## A dog's life

Humans are susceptible to many animal diseases. About 80 different ailments can be caught from either wild or domestic animals, including cats.

## No spare parts

There's an interesting sign hung just outside the tool crib in the Lafayette Works (Alcoa) die shop. It reads: "The following items are not in our stock and cannot be purchased for any amount: Fingers, arms, toes, feet, legs, skulls, eyes (right or left, sight of either). While the hospital workshop will attempt to repair any of the above, if damaged, it cannot, however, guarantee the results. Take care of what you have."

—The Alcoa News  
March, 1958

## **Selection, Placement, Training**

**129 members of the Automotive and Machine Shop Section report on the Safety Department's role in developing safe workers**

*This article is based on information developed by the Inventory of Occupational Accident Prevention Activities.*

*Sponsored by the Member Opinion Committee of the Council's Industrial Conference, the inventory is designed to obtain specific facts on industry's actual accident prevention activities.*

*John Gallagher of the Industrial Department staff is conducting the inventory among members in 14 of the Council's industrial sections.*

★ ★ ★

**H**OW DO companies in the Automotive and Machine Shop Section—the Council's largest industrial group—go about training a new employee in safe work practices?

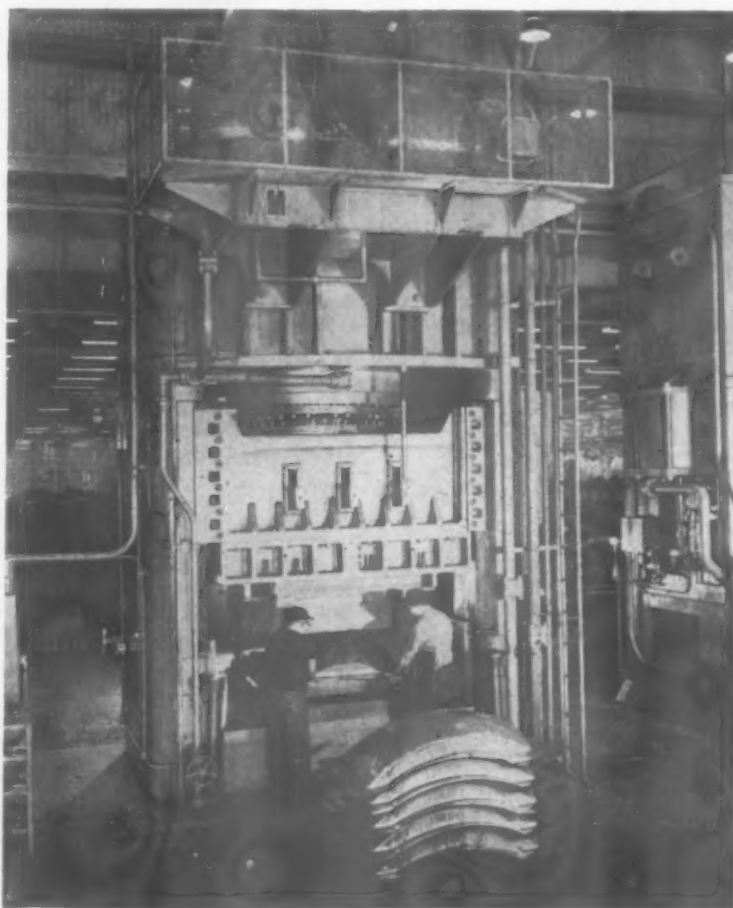
To get a detailed answer to this question, a comprehensive survey was made of the Section's members. Questionnaires were sent to 565 plants, and 129 units participated. These operations extend in size from those with fewer than 100 workers to a plant employing 27,000 persons.

Companies queried make a variety of metal products (exclu-

sive of basic metal production, foundry output, and structural form fabrication.) Products range from giant cranes, heavy earth-moving equipment, automobiles,

trailers and tractors to power tools, typewriters, cameras and fountain pens.

The survey shows most safety departments are deeply involved



**PRODUCTS** of the Automotive and Machine Shop Section range from fountain pens to bulldozers. Functional use of paint to highlight the point of operation of this huge press and general good housekeeping are evident. (Caterpillar Tractor Co.)



in selection, placement, and training of the worker. The safety man gets a chance at the new employee even before he applies for a job. In almost three-fourths of the large plants (those with more than 1,000 employees) the safety department is consulted in developing job requirements.

Before the prospective worker has walked through the plant gate, the safety department has helped set up a safe job for him by putting down on paper the safe work methods he will follow.

Safety personnel in smaller plants aren't as likely to be consulted in setting up job requirements. There is only a 50-50 possibility the man in charge of safety will enter into developing job requirements.

In most plants where there are written job specifications, these are reviewed from time to time. About one out of four operations re-examine jobs continuously or at definite intervals ranging up to several years. In about 10 per cent of the plants, specifications are reviewed only when job changes are made.

Foremen in the larger plants probably won't have as much say-so in hiring as their counterparts in smaller factories. About four of five smaller plants give fore-



**CONVEYORS** of many types speed the production and assembly of many fine parts and keep much trucking out of the aisles. (The Austin Co.)

men a chance to look over the prospective employee; this ratio drops to two out of three in larger plants. And in many cases the foreman exercises only a type of veto power on personnel's choice.

In his interview the foreman will have a chance to evaluate the applicant on the basis of experience, skill, physical qualifications, attitude and other factors. These are all important in the light of production. But these

points are also significant when it comes to accident prevention.

An individual's attitude can contribute to an accident. Experience has shown there is a relationship between a man's attitude toward his supervisor and work, and the manner in which the man accepts safety instruction and follows safety practices.

**Indoctrination.** An employee is most impressionable about his work when he first comes on the job. Nine out of 10 plants—large and small—recognize this fact and, along with other material about the company, provide workers with safety information from the start.

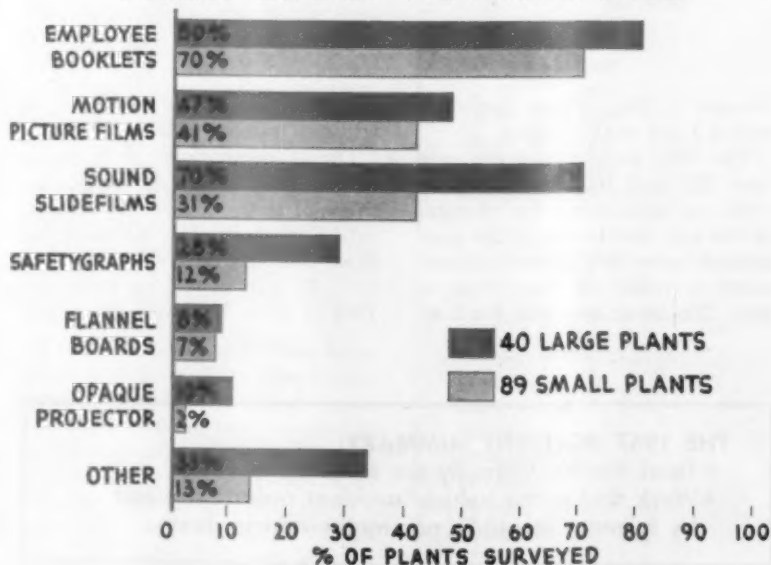
Many plants give the new employee a safety rule book. If his job requires safety equipment, he is informed how to get it, whether it be goggles, safety shoes, hard hat, or other gear.

If he is working in a small plant, the worker is more likely to receive individual attention in his indoctrination. Two-thirds of small plants report they train new employees singly. Less than a third of the larger operations follow this practice, and another third of these indoctrinate both individuals and groups, depending on the situation.

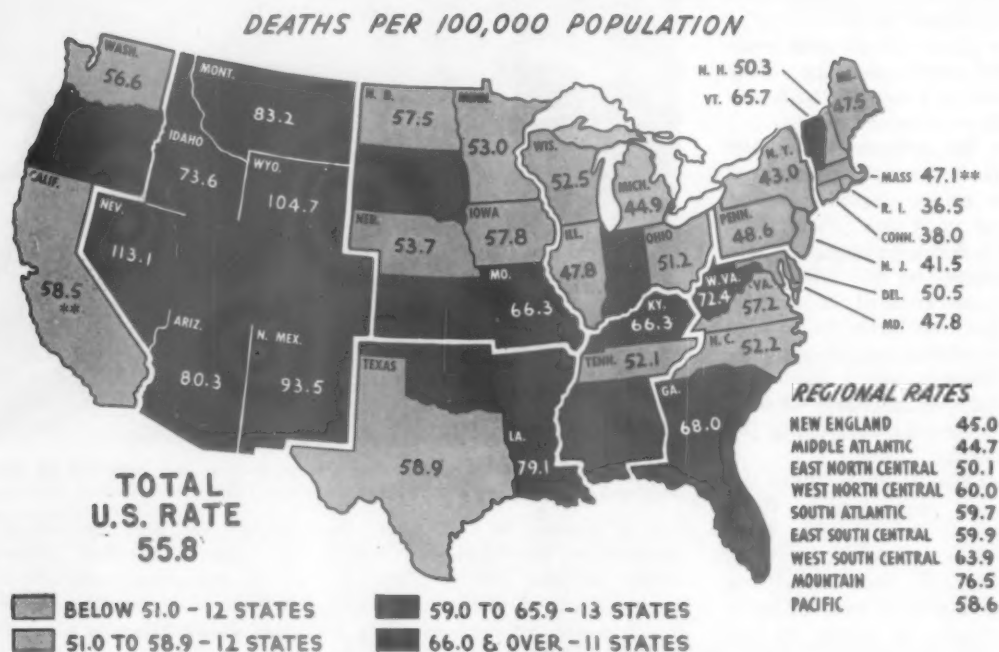
Most firms give safety indoctrination to new employees be-

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## PLANT USE OF TRAINING AIDS



## ACCIDENTAL DEATH RATES BY STATES — 1957



SOURCE: Reports from State Health Departments (unless otherwise noted) \* 1956 National Office of Vital Statistics data. \*\* Estimates based on incomplete information.

# TRAGIC FACTS

By J. L. RECHT

## About 95,000 Accidental Deaths

**T**HE TREND of accidental deaths was unchanged in 1957. The death total was approximately 95,000—virtually the same as for 1956.

There were decreases in motor-vehicle and work deaths, but these decreases were offset by an increase in public non-motor-vehicle deaths. The 10-year change in deaths from 1947 (allowing for

changes in classification methods) was a 1 per cent increase.

The 1957 accidental death rate was 55.8 per 100,000 population, with no adjustment for changes in the age distribution of the population since 1940. If such adjustment is made, the rate drops to 54.6. The latter rate was the low-

est on record except for the 1954 adjusted rate of 54.2.

Direct comparison with years before 1949 cannot be made because of changes in death classification methods, but allowing for those changes, the 1957 crude rate was 32 per cent less than the 1903-12 rate. If deaths from mo-

J. L. RECHT is Senior Statistician, Statistics Division, National Safety Council. This summary of the accident experience of 1957 is based upon *Accident Facts — 1958 Edition*, the Council's annual compilation of essential information about accidents which was recently distributed to members.

### THE 1957 ACCIDENT SUMMARY:

- Total deaths: Virtually the same as in 1956
- Work and motor vehicle accident reduction offset by increase in public non-motor-vehicle deaths

tor-vehicle accidents (few in 1903-12) are omitted, the death rate for other accidents showed a decrease of more than one-half by 1957.

Two disasters occurred in 1957, resulting in 50 or more deaths. Hurricanes and floods killed about 350 persons in Louisiana and Texas, and 72 died when fire destroyed a home for the aged in Missouri.

In accidents resulting in 5 or more deaths, the 1957 toll was about 1,700—about 400 more than occurred in such accidents in 1956, according to tabulations of the Metropolitan Life Insurance Company.

Nonfatal injuries in 1957 are estimated at about 9,600,000. Approximately 350,000 of the injuries resulted in some permanent impairment, ranging from loss of part of a finger to total crippling. The remaining injuries resulted in temporary disability extending beyond the day of the accident, but in many cases only a few days.

#### Accidents vs. Disease

Detailed information on deaths from disease is not available for 1957, but it is reasonably certain that accidents held the same position as in 1956. In that year the crude death rate for accidents was approximately 57—the fourth highest rate for any cause.

Leading cause was heart disease, with a death rate of 361. Cancer was second with a rate of 148. Vascular lesions of the central nervous system came third with 106.

Twenty years earlier, in 1935, pneumonia and nephritis had death rates considerably higher than the accident rate. But by 1956, the pneumonia rate had dropped to fifth place in causes of death, while nephritis fell to twelfth place as a result of new medicines and improved medical techniques.

From age 1 to age 36 there were more deaths in 1956 from accidents than from any other cause. The 1956 accident rate was much higher for males than for females—80 to 34. For males, only heart disease, with a rate 430; cancer, with 159, and vascular lesions, with 104, outranked accidents as

a cause of death.

Among females also, only three causes had higher death rates than accidents: heart disease, 293; cancer, 138; and vascular lesions, 109.

For males alone, accidents were the leading cause of death from ages 1 to 37.

**Costs.** Those costs that can be estimated totaled approximately \$11,900,000,000 in 1957.

Wage loss, including the present (or discounted) value of anticipated future earnings for deaths and total disabilities, was about \$3,800,000,000.

Medical expense, \$950,000,000.

Overhead costs of insurance, \$2,250,000,000.

Property damage in motor-vehicle accidents, \$1,850,000,000.

Property damage in fires, \$1,023,000,000.

Indirect costs due to work accidents, \$2,000,000,000.

#### Age Distribution

In 1957, as in other years, the best record was for children 5 to 14 years old. The accidental death total was 6,300 and the death rate per 100,000 population was approximately 19. The rate was about 4 per cent less than in 1956 and 54 per cent less than the average rate for the 10 years 1903-12.

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#### DEATHS AND DEATH RATES OF WORKERS BY MAJOR INDUSTRIES, 1957

Industry Group	Total Deaths	Deaths per 100,000 Workers	No. of Workers Per Death
Mining, quarrying, oil and gas wells .....	900	110	900
Construction .....	2,600	71	1,400
Agriculture .....	3,500	56	1,800
Transportation .....	1,300	43	2,300
Service .....	2,500	15	6,600
Public Utilities .....	200	13	7,500
Manufacturing .....	1,900	11	8,900
Trade .....	1,300	10	9,800

#### TRENDS IN ACCIDENTAL DEATHS, 1956 to 1957

TABLE I — By Age

Age Group	Total Deaths	Deaths per 100,000 Persons	Change in rate from 1956
All ages .....	95,000	55.8	- 2%
0 to 4 years .....	8,350	43.6	0%
5 to 14 years .....	6,300	19.1	- 4%
15 to 24 years .....	13,150	59.7	- 5%
25 to 44 years .....	20,600	44.0	- 2%
45 to 64 years .....	19,400	56.0	- 1%
65 years and over .....	27,200	184.4	0%

TABLE II — By Type

Type of Accident	Total Deaths	Deaths per 100,000 Persons	Change in rate from 1956
Motor-vehicle .....	38,500	22.6	- 5%
Falls .....	20,800	12.2	+ 1%
Drownings .....	6,600	3.9	+ 5%
Burns .....	6,400	3.8	0%
Railroad .....	2,600	1.5	- 6%
Firearms .....	2,200	1.3	0%
Poisons (except gas) .....	1,450	0.9	0%
Poisonous gas .....	1,200	0.7	0%



The big show means a big job to be done by speakers, section officers, staff . . . by everyone with responsibility for making the National Safety Congress a must with safety leaders everywhere

## CONGRESS PLANS

### Race Down the Homestretch

**F**INAL arrangements on speakers, space, and special activities are now under way for the 46th National Safety Congress and Exposition scheduled next month in Chicago.

Session subjects range from automation to problem drinking, health surveys to metal stamping die design, and from large loss fires to joint use of electric-telephone facilities.

Under the banner, *Safety Begins at Home*, 12,500 expected Congress-goers will attend 200 sessions slating more than 700 paper presentations. At least 185 commercial exhibits will be displayed in 248 booths.

For instance, "The Organization and Structure of Our Union Safety Program" is planned as a Labor Section panel under guidance of Rodger Coyne, director of Occupational Health and Safety, International Union of Electrical, Radio and Machine Workers, AFL-CIO, Washington, D. C.

Panelists are to be: John Gruden, safety director, Ford Local 600, United Auto Workers, AFL-CIO, Dearborn, Mich.; Bruce Thrasher, staff representative, United Steelworkers of America, AFL-CIO, Birmingham, Ala.;

John T. Atkinson, safety director, District Council No. 1, International Woodworkers of America, AFL-CIO, Vancouver, B. C.; and Elwood D. Swisher, vice-president, Oil, Chemical and Atomic Workers International Union, AFL-CIO, Denver, Colo.

The Electrical Equipment Sections will hear Marshall E. Kulberg, division safety engineer, Semiconductor Division, Sylvania Electric Products, Inc., Woburn, Mass., speak on "Electronic Safety Devices."

This section will also hear about "Microwave Radiation Hazards" from Dr. Thomas S. Ely, assistant chief, Health Protection Branch, Division of Biology and Medicine, United States Atomic Energy Commission.

"Decisions for the Future" for occupational safety leaders is sponsored by the NSC Industrial Conference and ASSE. This program will feature speakers: Industrial Conference—Gerard O. Griffin, vice-president of industry for NSC and safety director of Dravo Corp., Pittsburgh, Pa.; Sections—W. O. Wilson, vice-chairman of the NSC Industrial Conference and safety manager for Standard Oil of Indiana, Chicago;

Trade Associations and the Business Press—Gustav L. Nordstrom, executive-director, Folding Paper Box Association of America, Chicago; Insurance Organizations—Donald G. Vaughan, secretary of the Aetna Casualty and Surety Company, Hartford, Conn. (also president-elect of ASSE); and Safety Engineering Profession—Joseph C. Stennett, director of the Accident and Fire Prevention Division, National Association of Mutual Casualty Companies, Chicago (also a past ASSE president).

Speakers at the stevedoring safety session of the Marine Section are coming from Hawaii, California, Texas, New York, and South Carolina. A film, "By the Sea," showing stevedoring operations in Hawaii, is to be presented by Robert P. Alden of Castle and Cook, Ltd., Honolulu, Hawaii.

Co-sponsored by the Safety Division of the American Society of Mechanical Engineers and the American Society of Safety Engineers are three discussions: "Safe Design of Industrial Furnaces"—J. B. Smith, chief engineer of Factory Mutual Engineering Division, Norwood, Mass.; "Safe Operation of Industrial Furnaces"



—Leonard B. Wocholski, associate chairman of the Science Department, General Motors Institute, Flint, Mich.; and "Planning Safety Into Automation"—Thomas E. Seavey, master mechanic of the Pontiac Motor Division, General Motors Corp., Pontiac, Mich.

Recreational boating safety, a field new to the Congress and sponsored by ASSE, will include presentations on boating activities developed by the U. S. Coast Guard, legislative aspects to promote small boat safety, practical application of small craft regulations through services of local safety councils.

Vice-Adm. A. C. Richmond, commandant of the U. S. Coast Guard, Washington, D. C.; Mrs. George Welles, Jr., of the Legislative Subcommittee and Governor's Boating Safety Committee for Minnesota; and Paul J. Hoover, president of the Cleveland Safety Council, will speak on these subjects, respectively.

In addition to its planned debate on operator recognition, the Transit Section will hear how the city traffic engineer works to reduce high accident figures and locations; development of driver supervisors; and aptitude measurement. A roundtable workshop will discuss: "No Reports"; keeping operators interested in safety; and making the operating job easier.

### Lead Exposure Control

Dr. William L. Lea, director of the Industrial Hygiene Division for the Wisconsin State Board of Health, Madison, is to speak on "How to Develop Lead Exposure Control" before the Printing and Publishing Section.

"Joint Use Safety Considerations," regarding poles jointly used by electrical and telephone facilities, will be the subject of one Public Utilities Section meeting. E. W. Glancy, engineer for the American Telephone and Telegraph Company in New York City, will speak.

R. N. Papich, safety consultant of the American Gas Association, is to talk on the accident record of the gas industry and the safety responsibilities of supervisors in the industry. His comments come

under the title, "Gas Industry Safety Program Paying Off."

Programs on the selection of safety personnel, how to improve relations with labor unions, cost accounting in the safety department, and personal development will be heard by Commercial Vehicle Section members during the Congress.

### Drinking Problem

"The Problem Drinker and the Safety Program" will be presented at the Rubber Section gathering. J. E. Laughlin, plant protection manager of the Firestone Tire and Rubber Co., Akron, Ohio, will be the speaker. Another program planned by this section is "Engineering Safety Into Manual and Automatic Curing Equipment," as discussed by L. E. Soderquist, vice-president and director of engineering for The McNeil Machine and Engineering Co., Akron, Ohio.

The Pulp and Paper Section, combining with the Wood Products Section, is to hear Alfred Lateiner, consultant in training and safety from Mamaroneck, N. Y., speak on "Training for Accident Control."

A "Progress Report on Continuous Methane Measurement for Alarms and Power Shut-Off" will be delivered by R. S. James, chief of the Branch of Electrical-Mechanical Testing for the U. S. Bureau of Mines, Pittsburgh, Pa., before the Coal Mining Section.

W. Irwin Gill, president of Gill Blast Hole Drilling Co., Inc., North Branford, Conn., will discuss "Safer Drilling Through Preventive Maintenance" at the meeting of the Cement, Quarry, and Mineral Aggregates Section.



"I think we just unscrew the little lid and let more air in."

Special techniques in training workers and management for safety are to be demonstrated at a session, called "Is Training for Safety Different?" Presiding will be Earle S. Hannaford, safety engineer for Long Lines Department, American Telephone and Telegraph Company, New York. Those making presentations include: Ralph M. Hartmann, manager of training and development, Quaker Oats Co., Chicago; Wells F. Anderson, senior vice-president, National Gypsum Co., Buffalo, N. Y.; and Earle Hannaford.

What is considered a new use for fertilizer is "Ammonium Nitrate Blasting in Open-Pit Mining," on which James S. K. McChesney, mining engineer for the Marmoraton Mining Co. Ltd., Marmora, Ont., Canada, will speak before the Mining Section.

### Large Loss Fires

In an industrial fire protection program Chester I. Babcock, manager of the Fire Records Division, National Fire Protection Association, Boston, is to comment on "Lessons From Industrial Large Loss Fires."

Survey techniques for gaining information on home safety will be discussed by three speakers under the guidance of Dr. James L. Goddard, chief of the Accident Prevention Program, U. S. Public Health Service, Washington, D. C.

Speaking on national health surveys is Forrest E. Linder, director of the National Health Survey Program, U. S. Public Health Service, Washington, D. C. Dr. Leslie Corsa, chief of the Bureau of Maternal and Child Health, California Department of Public Health, Berkeley, Calif., will discuss state surveys; and Dr. George W. Starbuck, medical chairman of the Greater New Bedford Children's Accident Prevention Program, New Bedford, Mass., will remark on local surveys along with Emil Tiboni of the Philadelphia Health Department.

Also, the Power Press and Forging Section is to hear from Stanley Cope, president of the Acme School of Die Design, South Bend, Ind., on "Metal Stamping Die Design."

# POWERFUL HELPERS

In industry and in home workshops, portable electric tools are time and labor savers. For safe performance, treat them with respect

**D**URING the past 25 years portable electric tools have become a mainstay of industry and the amateur do-it-yourselfer.

Almost every plant and home workshop is now equipped with the latest in portable electric drills, sanders, saws, hammers, grinders, and other power tools.

With the upsurge in use of these tools has come a proportionately large upswing in the number of accidents, injuries, and—in many instances—fatalities. Consequently, selection, inspection, and maintenance of these various tools is urgently to the point.

Selection of the proper type, weight, and size tool for a given job affects costs and production and, ultimately, working environment.

For example, electric screwdrivers are offered with positive type or adjustable clutches. The positive type clutch can best drive wood screws, enabling the operator to overcome differences in hardness and grain of wood by more or less pressure on the tool.

An adjustable clutch, when used for driving wood screws, can overdrive or underdrive the screw, depending on the uniformity of the wood. Obviously, this type of clutch can best drive machine screws, bolts, and nuts and can obtain uniformity of torque on each screw, depending on clutch adjustment. Here, the job determines the choice. A wrong selection of tool type can be costly.

Portable shears are often purchased on a weight basis—for the convenience of the operator—rather than for capacity. High maintenance costs frequently exist where a unit has been purchased to cut 16-gauge soft steel, for example, but due to a change in production requirements the unit is currently being used on stainless steel—a metal demand-

ing more power and a stronger and larger electric shear unit. Again, selection is a key element!

Most electric tool makers offer many models of a given size tool, but too often shop requirements are not considered and the wrong model tool is purchased. The standard 1/4-in. drill is best adapted for light, intermittent work and is ideal for repair kits. The 1/4-in. heavy duty drill is best suited for continuous production work and drilling in heavy, tough material. To choose the wrong drill here is to choose waste and hazards.

Generally, heavier models are recommended, as the extra cost of purchase can often be saved in a few months through lower operating expenses and faster production.

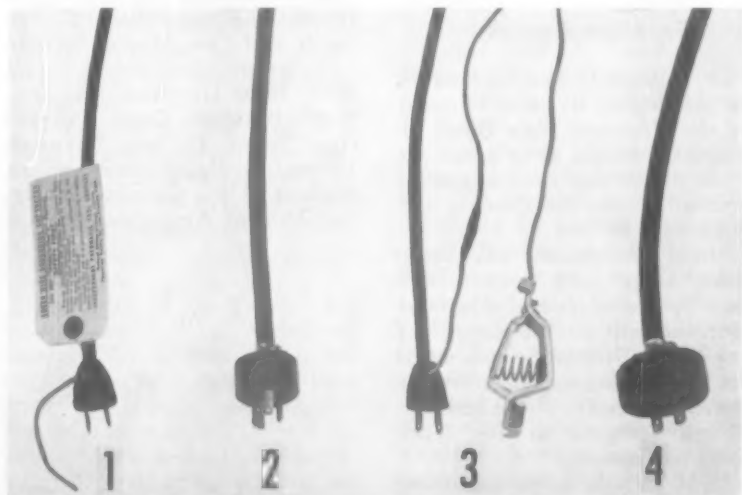
Not only should type, weight, and size of a given tool be considered, but the speed of the unit also can cut costs and boost pro-

duction. As illustration, 1/4-in. electric drills are available in 500, 750, 1,000, 1,700, 2,500, 3,500, and 5,000 rpm models, permitting speeds for each type of production job and for general purpose work.

Electrically powered tools always offer the possibility of shock, flashburn, falls caused by minor shock, and death through major shock. Used in wet or damp areas, these tools may expose the operator to a flow of electrical current through his body.

Current, not voltage, kills. According to Ohm's law, current equals voltage divided by resistance. For example, a person operates an electrically defective portable drill using 120 volts. If he perspires, the person's skin resistance could easily be reduced to 1,000 ohms.

If this person is contacting a good ground, a current (amperes)



**TYPES OF PLUGS** used with extension cords for portable electric tools. (1) Two-prong plug with ground wire. (2) Three-prong plug which is grounded automatically. (3) Two-prong plug with battery clamp soldered to ground wire. Clamp can be attached to water pipe or other grounded object. (4) Four-prong plug for operation on 180 or 360 cycles.



**CORDS** should be kept out of oil and grease and protected against abrasion. Bit should be protected against damage.

amounting to .12 amperes or 120 milliamperes could flow through his body. Any passage of more than 8 to 15 milliamperes is considered unsafe, so flow of 120 milliamperes obviously places the worker in a hazardous position. However, if the tool case is properly grounded, the current would be carried through the ground wire and blow a fuse or trip the circuit breaker due to excess passage of electricity.

There are many reasons for electric shock in portable electric tools. Water or moisture in the motor or switch, carbon from the brushes, broken or loose parts in the case, defective insulation of motor windings, worn or defective extension cords or faulty cord connections may carry the current to the tool frame. Most of these conditions can occur without being noticed and can be spotted through frequent inspection or testing.

To avoid these hazardous possibilities many manufacturers provide three-conductor power cords on portable electric equipment. Some manufacturers install a small tag wire at the plug. If a steel conduit system is used in your wiring circuit, the system usually provides a good ground. In this case, the tag wire should be fastened under the center screw on the wall plate.

If a steel conduit system is not used in your wiring circuit, a wire should be fastened to this tag wire and secured to a nearby

water pipe, metal building frame or a driven ground rod (See the National Electrical Code). A gas pipe should never be used.

Other manufacturers are providing three-wire power cords with a polarized plug containing three prongs. This requires a polarized receptacle and a three-wire grounded system.

Universal portable electric tools are equipped with a motor that will operate on direct or alternating current of 25, 40, 50, or 60 cycles of specified voltage, as indicated on the tool nameplate. These tools will work satisfactorily at 10 per cent over or under specified voltage, but serious damage will occur to the motor if used beyond these limits.

Low-voltage operation will reduce power and heat up the motor. Portable electric tools used at high voltages and run too fast will also overheat. However, most small universal motors in present-day portable electric tools function at high speed and depend on constant, abundant air-circulation for efficient cooling.

Excessive loading of a tool should never be made a habit. A margin of safety in every tool will absorb accidental or emergency overloads, but constant abuse will soon cause serious damage and require expensive replacement. Using a large, heavy-duty drill on light work takes longer to do the work, wastes electric power and energy, and the weight and torque of the larger tools are likely to break the smaller drill bits, possibly causing injury.

Frequent inspection and careful attention to the first signs of any wear or trouble often will save costly repair bills. An inspection

schedule with a card record is recommended.

In many instances, correct, adequate lubrication may determine the life and service of any electric tool. Depending on its use, each such machine should be inspected every 30 days to 6 months. Special greases are available to withstand high speeds and temperatures encountered. Ordinary grease often gives inadequate protection. Most bearings now used on portable electric tools are of the grease-sealed type not requiring additional lubrication for the life of the bearing.

When regreasing the gear case, all old grease should be removed. Never fill the gear case more than half full. Too much grease is as bad as too little. Grease expands when warm, and the excess will be forced through the bearings into the motor, damaging windings and clogging ventilating holes. Periodically inspecting such areas as the air ventilating holes or slots will keep them free of dirt and will prevent overheating of the motor.

Next, the commutator—the nerve center of the tool—should be inspected frequently, and, if rough, should be cleaned lightly and smoothed with very fine sandpaper. Emery cloth should never be used for this purpose. If a groove has been cut by the brushes, the commutator should be turned down on a lathe until a smooth surface is obtained. If the mica insulation was originally undercut, it must be undercut again after the turning operation. If there is excessive arcing at the commutator, check for weak brush springs, high mica insulators, in-

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#### WHEN USING PORTABLE ELECTRIC TOOLS . . .

- ... Check to see tools are properly grounded.
- ... Wear eye protection devices.
- ... Keep tools cleaned, oiled, and repaired.
- ... Avoid using tools near flammable vapors or gases.
- ... Use only approved, inspected extension cords and connections.
- ... Avoid kinking or crushing cord or hanging it on sharp edges.
- ... Protect cord against oil, hot surfaces, and chemicals.
- ... Shorten cord or get new one; don't patch breaks.
- ... Coil cord loosely in clean, dry storage place.





## Between

# NOISE AND EARS

For many operations, ear protectors are the only practical means of reducing noise. How can their effectiveness be measured?

**R**EDUCING NOISE at its source, or in the environment between the source and the people exposed to it, has been the object of much research. Much has been accomplished along this line, but some operations generate more noise than can be controlled by any methods yet available.

The only remaining step is to provide individuals exposed to excessive noise with some form of personal ear protection. Development of devices designed to keep noise from human ears has been going on for many years, and many types of ear protectors are now available.

Choice of a protective device is complicated by several factors. First, the protector must be able to reduce the noise in the environment to a safe level by the time it reaches the individual's eardrums.

Second, the device must be comfortable to be worn for relatively long periods.

Third, the device must be made of material that will not cause skin irritation or disease when in contact with the ear canal or skin around the ear.

### Types of Protectors

An ear protector, defined by the American Standard Method for the Measurement of the Real-Ear Attenuation of Ear Protectors at Threshold, Z24.22-1957, is "a device that is worn to reduce the effect of ambient sound on the auditory system." The following types are defined by the Code:

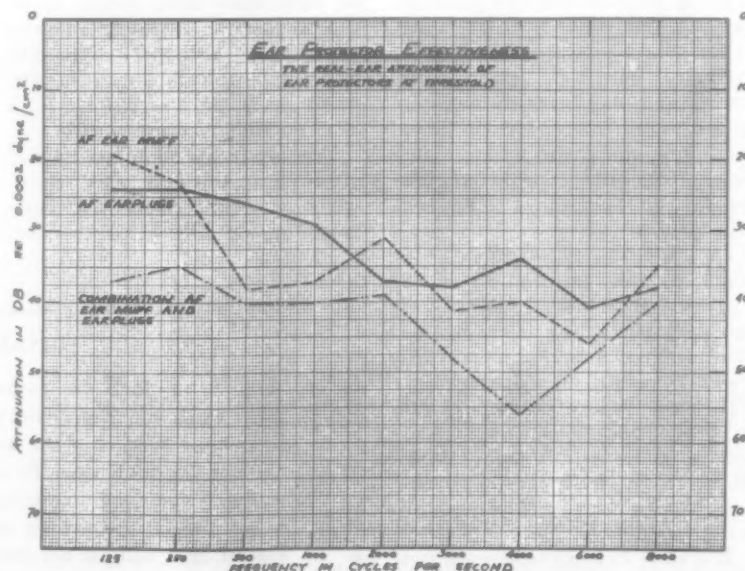
1. **Earplug:** an ear protector inserted in the external ear canal.
2. **Earmuff:** an ear protector that fits over the ear, usually with a soft outer ring intended to fit snugly against the side of the head.
3. **Helmet:** a device, sometimes functioning as an ear protector, that covers more than the ears—usually a substantial part of the head.

Two other definitions in the Standard in the appraisal of ear protectors:

**Threshold of audibility** (threshold of detectability) for a specified signal is the minimum effective

sound pressure level capable of evoking an auditory sensation in a specified fraction of the trials. The characteristics of the signal, the manner in which it is presented to the listener, and the point at which the sound pressure level is measured must be specified.

**Real-ear attenuation at threshold** of an ear protector is the difference in decibels between the threshold of audibility for an observer with ear protectors in place (test threshold) and that measured when his ears are open and uncovered (reference threshold).



ATTENUATION provided by protectors used in the Air Force. Tests were made under carefully controlled conditions. ASA Standard Z24.22-1957, recently issued, specifies testing methods.



The standard was developed by an ASA working committee headed by Dr. Ira J. Hirsh and sponsored by the Acoustical Society of America. Dr. Hirsh is head of the Psychology Laboratory at the Central Institute for the deaf and an associate professor of psychology at Washington University, St. Louis.

Tests to establish the standards were conducted on a number of human listeners, rather than on artificial models, to approach as closely as possible actual working conditions.

The committee included people experienced in various phases of ear protection—people who had worked in the development of ear plugs, experts in physical and psychological tests, and those connected with the use of ear protectors in the field.

Since the factors of comfort and toxicity did not lend themselves to standard test procedures at present, attention was concentrated on working out a standard test procedure for evaluating how much noise reduction was brought about by a particular ear protector.

### Conflicting Reports

At the time requests for a standard procedure were received, there were conflicting reports on the performance of various devices. One laboratory might report a particular ear plug had a certain amount of attenuation at various frequencies, while measurements in another laboratory might show quite different amounts. Differences in procedure might account for the difference.

The new standard examines the effectiveness of an ear protector essentially in terms of its ability to give the wearer an artificial hearing loss. The procedure consists in measuring the minimum acoustic energy required for a listener to just hear pure tones at different frequencies and then measuring these thresholds again with the ear protector in place. The difference between the two threshold gives an estimate of the noise reduction introduced by the ear protector.

Use of human listeners as measuring indicators involved certain

LISTEN, cats, we've gotta update our semantics, or the younger set will be deprived of our expert advice and guidance due to a breakdown in communications.

*Purple People Eater* sold a million discs in three weeks—in the middle of a recession, yet—with *Lollipop*, *Witch Doctor*, *Yakity Yak*, *Tequila* and *Short Shorts* close behind. It isn't so much what you say as how you say it these days.

To illustrate the technique, when you lamp all these wild accident statistics, it's like the end. The future is nervous enough, but untimely demises and abbreviated extremities are crazy, man.

Folks are soft as a grape on safety, but it'll orbit, if you play house with it. Embryonics galore enter the work force each year saying, "Lay it on me Daddy-O, so I won't get cut out extempore." But, too often the repartee is, "Dig me later, Jack!"

In most cases, some cat ends up between the lily-whites, because

## 'REET!

someone goofed. Be it he or some other at fault, he's been dispatched no less.

No hopeful gets hep between sundowns. You gotta hit 'em again and again with the frantic word. Take the word, housebreak it, then gather the gang for a spitball session. If nothing jells, re-wrap it. A cool conception leaves 'em with the most, to say the least.

When you lamp a crazy pass which might dispatch some cat or chick, run a count-down on the situation. Say, "Friend, I'm not the greatest, but you shouldn't continue that same old jazz. You're a gasser in some lines, but your pipes are sucking air on that bit. Here's the pitch.... dig me?"

"Yes, Daddy-O, if you want to go home with your skin on, you'll realize there's protein in safety, if you Mother Hen it a bit. Otherwise, you might have a low level flameout."

I hope you dig me the most, cause I'm feeling the least.

—ROBERT D. GIDEL

precautions. Since sizes and shapes of ear canals and heads differ, a sample of at least 10 persons is recommended. Even on one person, the variability in fit from time to time indicates the need for more than one measurement on each person. The standard recommends at least three separate occasions.

Furthermore, earplugs and earmuffs are moved slightly as a person goes through normal activities. Certain jaw and head movements are therefore made by the listener after the ear protector is installed before the threshold tests begin.

**The testing environment.** First, it must be quiet enough so the thresholds can be truly quiet, not thresholds affected by noise masking. Second, the room must be free of echoes so, when a sound is generated by the loudspeaker,

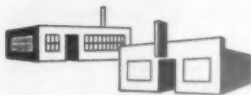
its intensity at the listener's position can be easily specified.

The standard tells about the attenuation characteristics of an ear protector when worn on a head or in an ear canal typical of at least 10 listeners. Even this measurement will not tell exactly how it will perform in the presence of high-intensity noise, but it is expected to give a measurement for the relative effectiveness of several ear protectors.

Also, if it is known a noise level of  $x$  decibels (db) exists near a worker, and it is also known a particular ear protector has a real-ear attenuation of  $y$  db at a certain frequency, then the noise level that will actually affect the man's ear will be  $x - y$  db.

Copies of American Standard Z24.22-1957 are available at 50 cents each from American Standards Association, 70 East 45th Street, New York 17.

# SMALL BUSINESS and ASSOCIATIONS



By A. M. Baltzer and John T. Curry

Small Business Program Staff, National Safety Council

## 1958 Association Award Winners

The National Safety Council has named the 14 associations qualifying for its 1958 Associations Award. This group, the largest in five years of competition, again recognizes first-time winners and veterans who have greatly expanded or improved their work programs. These awards prove good safety work can be accomplished with a very modest budget, and even with little or no professionally-trained staff.

The 1958 winners will receive their awards October 22 at the National Safety Congress in Chicago. A special presentation luncheon is to feature: Glenn B. Sanberg, executive vice-president, American Society of Association Executives, Washington, D. C.; and William G. Johnson, general manager, National Safety Council, Chicago.

Our sincere congratulations to the winners for the general excellence of their programs!

### 1958 WINNERS—ASSOCIATION AWARDS

Associated Industries of Georgia  
British Columbia Loggers' Association, Inc.  
Can Manufacturers Institute, Inc.  
Copper and Brass Research Association  
Folding Paper Box Association of America  
Industrial Accident Prevention Association of Quebec  
Institute of Scrap Iron and Steel, Inc.  
Milk Industry Foundation  
National Restaurant Association  
National Tool and Die Manufacturers Association  
Pacific Coast Association of Pulp and Paper Manufacturers  
Plywood Manufacturers Association of British Columbia  
Portland Cement Association  
Trumbull County Manufacturers Association

## Want to Start a Survey In Your Industry?

This cartoon has seen a lot of mileage. It has been supplied without obligation to more than a dozen associations, which used it in bulletins transmitting questionnaires on members' safety ac-



GET OUT FROM UNDER — LET US HELP!

tivities, injury rates, and insurance costs.

Write Small Business Program, National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill., for sample questionnaires, survey analysis reports, and details on "who does what" to find out "what's what" in your industry.

## Battle of the Sexes

The *National Provisioner* magazine carried a provocative article regarding the safety record of men and women at the Seitz Packing Company, St. Joseph, Mo. Women employees, who are 30 per cent of the work force and do the same type of work as the men, accounted for only 3 per cent of the firm's work accidents in 1957. More surprising, these women achieved the greatest injury rate reduction—about 90 per cent in one year!

This plant of about 240 workers is a member of the National Safety Council. Phil Denver, director of Seitz safety work, reports all accidents were cut 40 per cent in the past three years.

Let's tip our hats to the women employees who won this battle against accidents!

## How Accidents Eat Up Revenue from Sales

E. C. Woodward, safety director of A. O. Smith Company, Milwaukee, Wis., figures the firm's safety program has saved more than \$171,000 in workmen's compensation alone. Had accidents gone unchecked during the past 10 years of its reactivated safety program, A. O. Smith would have had to increase its annual sales by an average of \$2,800,000 just to cover the cost of taking care of injured people!

How much extra gross business must your company do to offset the cost of accidents? If your story tops Clark Woodward's, please let us know.

★ ★ ★

## New Members

These associations have affiliated with the National Safety Council since January 1958: Architectural Woodwork Institute, Chicago; Bituminous Coal Operators Association, Washington, D. C.; California Drycleaners Association, San Jose, Calif.; Federation of Sewage and Industrial Wastes Association, Washington, D. C.; Lumbermen's Industrial Relations Committee, Inc., Portland, Ore.; National Association of Home Builders, Washington, D. C.; National Association of Womens and Childrens Apparel Salesmen, Inc., Omaha, Neb.; National Furniture Warehousemens Association, Chicago; Ohio State Council of Retail Merchants, Columbus, Ohio; Steel Plate Fabricators Association, Chicago; and Texas Aggregates Association, Austin, Tex.

Is your association a member?



(Fiction)

*The contest brought in the usual lot of obvious and unrealistic suggestions. But one looked practical, and others indicated situations that needed investigation*

## SUGGESTION CONTEST

By **BILL ANDREWS**

September 2, 1958

To create a little interest during the dull summer months, we ran a safety suggestion contest among all workers on the project. The deadline was the end of August, so today we are faced with the job of reading and judging the entries.

My two young assistants found a good deal to laugh about among the suggestions. Never having judged such a contest before, and being very wise with that never-again-to-be-equalled knowledge that comes after a year of work in a profession, they find the mixture of unreality, crudity, and obviousness of many of the suggestions very funny indeed.

Here are some examples of entries one or another of the boys thought amusing enough to read aloud:

*"Gentlemen and dear sirs: There was an accident in our shop because some people (I wont mention any names) wont pick up around the benches. Mike stum-*

*bled over a tote box in the isle and fell right on his face. He could have just as well been hurt bad. My suggestion is to have a big meeting and tell everybody to always pick up things out of the isles, and then nobody will fall and get hurt like Mike almost did. Signed, Joe Lachewski."*

*"Sirs, The trouble is the damn girls. How's a guy going to keep his mind on his work with them giggling and making eyes and coming to work in tight slacks. You get the girls out and make this a man's shop, like it ought to be, and let the girls go and get married and stay home, and you'll find guys don't get hurt so much. Sincerely, One Who Knows (Clock No. 8643)."*

*"Gentlemen: I have designed an absolutely fool-proof guard with interlock that will prevent 100% of the press accidents. Naturally, I do not propose to reveal its nature for any measly \$25 prize. But if you are really interested in preventing accidents and will pay a*

*fair royalty, we can do business. Yours truly, E. H. Jaski."*

*"Dear Sir: The trouble is everybody is getting used to being babied. Back in the good old days when a workman was expected to know his job and do a good day's work, hardly anybody got hurt much. Now we got training programs and safety men and silly rules and all we hear about is accidents, accidents, accidents. Just stop talking so much about them and you won't have so many. Yours, Jay Danelson."*

I finally had to stop the boys. "It's easy to make fun of somebody's ignorance," I said. "Some of these letters show plenty of ignorance. Some of them are from cranks. But every one of them is at least worth looking at twice for some hint of truth, no matter how badly stated or unrealistically evaluated.

"For instance, where does Joe Lachewski work? I want to know, and I want one of you to go and

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# TRAGIC FACTS

—From page 21

The largest accidental death total, and the highest rate, was recorded for persons of 65 years and older. Deaths numbered about 27,200, and the rate was about 184. This was the same as the rate for 1956, and 21 per cent below the 1903-12 average rate, after allowing for changes in classification methods.

In the age group 25 to 44, the 1957 rate was 44—2 per cent less than in 1956—and 47 per cent below 1903-12.

For children under 5, there were nearly 44 deaths per 100,000 population—no change from 1956 and 54 per cent less than for 1903-12.

Persons 15 to 24 years old had a 1957 rate of 60—5 per cent below the 1956 rate of 60 and 8 per cent under 1903-12.

Among people 45 to 64, the rate was 56—a 1 per cent decrease from 1956 and a 45 per cent drop from 1903-12.

## Regional Death Rates

Of the 47 states reporting in 1957, 12 had rates below 51; 12 had rates of 51 to 59; 12 had rates of 59 to 66; and 11 had rates higher than 66.

In general, the lowest rates were recorded in the Middle Atlantic states with a regional rate 44.7, and the New England states 45.0. Average rate for the Mountain states was 76.5. In other regions rates varied from 50.1 to 63.9.

## Type of Accident

Motor-vehicle deaths ranked first among accident types in 1957, with a total of 38,500 deaths—a decrease of 3 per cent from 1956.

Falls ranked second with 20,800 deaths—3 per cent more than in 1956.

These two types of accidents alone accounted for more than three-fifths of the total. No other accident type approached them in importance. Deaths from drowning, the next most important type, numbered 6,600, only one-third the death total from falls.

Population death rates for the

important types of accidents showed little change from 1956 to 1957. Largest change was in the motor-vehicle rate, which dropped from 23.7 to 22.6 per 100,000 population.

Table II gives the death total, death rate and change in rate for the principal types of accidents.

## Work Accidents

Deaths in work accidents totaled about 14,200 in 1957, or 100 less than in 1956. Disabling injuries numbered about 1,950,000, compared to 2,000,000 in 1956.

These deaths and injuries cost the nation about \$4,000,000,000. Of this amount, \$1,100,000,000 represents the financial value of services lost to the nation as a result of disability, even though the worker himself was compensated for part of the loss.

Medical care cost \$430,000,000 and overhead cost of insurance totaled \$470,000,000. The remaining \$2,000,000,000 represents the estimated money value of damaged equipment and materials, production slow-down and time lost by other workers.

Cost of work accidents to industry alone averaged \$60 per worker, but this average cost includes lower costs in many organizations where effective safety programs are in operation. Where little has been done about accident prevention, the average cost of accidents is often much higher.

Absence from the job by injured workers was responsible for a total loss of working time of about 40,000,000 man-days. This figure does not include time lost on the day of the injury or time required for further medical treatment after return to work.

Additional losses, due to reduced productivity of others in the vicinity of the accident, delays while damaged equipment was being repaired, and the man-day equivalent of damaged products or equipment brought the time lost during 1957 to 230,000,000 man-days—equal to the total working time of more than 900,000 men for a full year.

## Death Rates

About 23 out of every 100,000 workers in the nation were killed in work accidents during the year. This average for all industry results from death rates for the individual industries ranging from a low of 10 per 100,000 workers in the trade industry to a high of 110 in mining, quarrying, and oil and gas wells.

## Off-Job Accidents

As usual, many more workers were killed off the job than on the job during 1957. Out of a total of 46,000 worker deaths during the year, about 31,800, or 69 per cent, were the result of nonwork accidents—in homes, on streets and highways, or in other public places.

The following table compares the death and injury totals for on-job and off-job accidents to workers and classification of off-job injuries:

Place of Accident	Deaths	Injuries
At work .....	14,200	1,950,000
Away from work .....	31,800	2,450,000
Motor-vehicle .....	18,500	650,000
Public non-motor-vehicle .....	6,900	850,000
Home .....	6,400	950,000

Ratio of off-job injuries to total injuries is higher in organizations with good on-job safety programs. Several industrial establishments with good safety records have reported that off-job accidents are responsible for 85 to 90 per cent of the disabilities due to accidental injuries.

## Motor-Vehicle Accidents

Motor-vehicle accidents in 1957 were responsible for 38,500 deaths in the United States. These accidents also caused 1,400,000 non-fatal injuries, of which 120,000 left the victim with some permanent impairment.

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**GIVE**  
**THE UNITED WAY**  
to: UNITED FUNDS  
COMMUNITY CHESTS



# INDUSTRIAL HEALTH



## Abstracts of current literature on Occupational Hygiene, Medicine, and Nursing

By E. L. Alpaugh, Industrial Hygienist, NSC

### Diesel Dermatitis— Case History Report

"An End to Diesel Dermatitis." Case history report sponsored by the Association of American Soap and Glycerin Producers, Inc. *Modern Railroads*, July 1958.

SOLVENTS, soldering acids, chromate rust inhibitor solutions, crankcase oils, greases, chlorinated hydrocarbons, and diesel oils are the principal skin irritants present in railroad shops.

Investigation of the industry concluded that lack of proper cleansing facilities, inadequate and distant washrooms, lack of proper industrial hand cleansers, and use of irritant petroleum solvents and chlorinated hydrocarbon solvents to remove soil from the skin were the main causes of dermatitis.

The Elgin, Joliet and Eastern, the Rock Island, and the Illinois Central railroads have reduced contact with irritants to a minimum by strategically placing wash basins, equipped with properly-selected skin cleansers and paper towels, in convenient workshop locations.

Protective clothing and barrier creams have been provided and workers urged to use them. Employees receive training on possible sources of skin troubles on the job and find out how to use available preventive measures.

The EJ&E spaced its wash stands about 100 feet apart next to work areas in the locomotive shop and roundhouse. Each stand has a specially-selected skin cleaner and paper towel dispenser. There are enough facilities to eliminate crowding, and frequent use has become an unconscious part of the work routine.

Management cautions employ-

ees to avoid unnecessary contact with oils, greases, and solvents and teaches workers that thorough personal cleanliness is essential. Supervisors enforce instructions. Skin irritations are reported immediately. This program has drastically reduced dermatitis at this railroad.

### "X-ray Case-Finding Programs in Tuberculosis Control"

This information has been abstracted from *Public Health Reports*, January 1958.

ORIGINALLY, mass x-ray surveys performed on a community-wide basis were conducted by the U. S. Public Health Service to discover unknown active tuberculosis cases in the adult population.

Today, the tuberculosis problem is considerably different than it was 15 years ago. There are areas of the country where the disease is almost nonexistent as well as localities where tuberculosis continues to be a serious health problem.

This change in the over-all picture has prompted the U. S. Public Health Service to support a more

selective use of mass x-ray surveys. The yield of new cases should be influential in establishing need and priority for such a program.

In addition, when x-ray screening is planned for any group, it is desirable that the scope of the program be matched to facilities available for adequate diagnosis and medical care of new cases. In areas having a low yield of new cases, the use of x-ray could be restricted to those reacting to tuberculin skin-testing.

Problems of radiation exposure associated with chest x-ray case-finding programs have been under review by a committee of experts. This committee recognizes risks inherent in such exposures, but believes the risks are relatively small compared to the great benefits of a properly conducted program.

The Public Health Service recommends a systematic inspection to be made of all x-ray case-finding equipment, so radiation exposures will be at a minimum. Photofluorographic x-ray equipment should be inspected prior to the beginning of a survey and at frequent intervals thereafter.

It is important that the proper-size cone be permanently installed. This will limit the field of radiation to the area of the fluoroscopic screen of the photofluorograph.

It is recommended that a filter of at least 2½ millimeters of aluminum be used in the useful x-ray beam to eliminate soft radiation. Radiation levels at locations occupied by technical and other personnel, and where incoming and outgoing examinees are stationed, should be consistent with standards stated in National Bureau of Standards Handbooks Nos. 59, 60.



"Hurry with the shots, Doc. You're holding up production."

# Solvents—Safety and Otherwise

By MELVIN Z. POLIAKOFF

The list is long. Some are flammable—all at least slightly toxic. But many of them can be used safely, if you know their characteristics

**I**LL BET there are more than a thousand different solvent cleaners which identify themselves as safety solvents. It would be helpful if their names would give a hint as to their composition. Then, at least, you would be in a fair position to set up safety practices for using them.

But no! You're faced with names like Solvo-Kleen, Electro-Solv, Electri-Kleen, Electrolene, Carbo-Solv, Carbon Met, Saf-Tee-Solv, and Formula 606.

Probably many of us have often longed for the good old days when, if a solvent cleaner were needed, we would simply drag out some carbon tetrachloride or gasoline and that would be the end of it . . . sometimes the end of us, too! At least in those days the safety man knew what he was dealing with.

Of course, you may sometimes find one of these safety solvents is nothing more than disguised carbon tetrachloride. I have nothing against carbon tetrachloride. It's a good solvent and has many important uses. As a matter of fact, you can often feel quite secure when using it, because nowadays people are so well aware of its hazards that proper precautions are usually taken in handling it.

An old-timer once asked me, "What have you chemists done to carbon tetrachloride? How come it's so much more toxic now than it used to be in the old days?" You people in the safety profes-

sion can take that as a tribute to your good work in insisting on suitable safety practices with toxic materials. Industrial hygienists are to be commended for gradually bringing the maximum allowable concentration (M.A.C.) limits of these products down to a safe working level.

## We All Use Them

The chances are that someone in your organization is using a safety solvent. Maybe it's your electrical department, where they may be spraying or dipping instruments, motors, switchboards, generators, or other electrical equipment.

Perhaps your office personnel are using a safety solvent to clean typewriters, business machines, or dictating equipment. If you do metal forming, drilling, grinding, lathe work, buffing, or polishing, your plant may be removing various lubricating fluids, cutting compounds, or light oils with a safety solvent.

If you maintain a fleet of trucks or do any work on automotive equipment, the chances are that someone is using a solvent for wiping down a chassis or dipping parts. If a product is being assembled or otherwise put into some completed form ready for delivery, you are no doubt using some type of solvent cleaner for final cleaning.

If your work involves precision instruments, such as ball bearings, gyros, and electronic devices, a safety solvent is probably used for removing various oils, greases, and the faintest possible traces of foreign matter. If you are in the textile or dry-cleaning business, a solvent is being used.

My point is simply that most of you are confronted with these solvents, and it will pay us to take a closer look at their various properties and hazards to determine how best solvents can be used safely.

In choosing a safety solvent, look for a product which will do the job required most efficiently, with minimum harm to equipment and personnel and at minimum cost.

Production people must concern themselves with such questions as whether a solvent will harm electrical insulation, plastics, varnishes, or other painted and enameled surfaces; whether it removes soils rapidly enough; whether it leaves a residue-free surface; whether the residue is conductive or non-conductive; whether the residue will react with oxygen; whether the solvent evaporates fast enough or, perhaps, too fast—and a host of other questions concerned with the efficiency of a solvent for a particular job.

## Defining "Toxicity"

However, one thing we know for sure about safety solvents is that all of them are at least a little toxic. What is toxicity? A good definition I have seen is simply the expression "too much."

When a solvent has been around a long time, we get to know a lot about it because of the kind of experience we have had with it. On a fairly toxic material, for example, the medical archives may periodically report deaths, illnesses, skin and lung problems, and similar subjects.

This kind of information and

MELVIN Z. POLIAKOFF is Technical Director of The Penetone Company, Tenaflly, N. J. This article has been condensed from a paper presented at the All-Ohio Safety Congress, Columbus, April 22, 1958.

experience enables the American Conference of Governmental Industrial Hygienists to establish what they call "a threshold limit" for a chemical. This threshold limit is the maximum average atmospheric concentration usually expressed as parts per million (ppm) of contaminant to which workers may be exposed for an eight-hour working day without injury to health.

Quoting from their report: "These values are based on the best available information from industrial experience, from experimental studies, and, when possible, from a combination of the two. They are not fixed values but are reviewed annually by the Committee on Threshold Limits for changes, revisions, or additions as further information becomes available.

"Threshold limits should be used as guides in the control of health hazards and should not be regarded as fine lines between safe and dangerous concentrations. They represent conditions only within which it is felt that workers may be repeatedly exposed day after day without their health being adversely affected."

The threshold limit value is commonly referred to as maximum allowable concentration, abbreviated M.A.C. You will recall the old-timer who claimed modern science has caused carbon tetrachloride to become more toxic. Perhaps, he was guided by the M.A.C. previously recorded at somewhere around 100 for carbon tetrachloride and currently listed as 25 ppm.

The same thing has happened to benzene which at one time was up around 150 and now is listed as 35 ppm. The more familiar we become with these various chem-

TABLE II  
Characteristics of Commonly-Used Industrial Solvents

Solvent	Molecular Weight	Vapor Pressure (mm. merc. room temp.)	Threshold Limit—ppm (MAC)	Specific Gravity	Flash Point °F (Tag CC)
Acetone	58.08	186	1000	0.792	0
Benzene	78.11	75.5	35	0.879	12
Carbon Tetrachloride	153.84	91.3	25	1.595	none
Chloroform	119.39	150	100	1.489	none
Ethyl Acetate	88.1	72.8	400	0.901	24
Ethyl Alcohol	46.07	44	1000	0.79	55
Methyl Alcohol	32.04	98.3	200	0.792	52
Methylene Chloride	84.94	355	500	1.336	none
Methyl Ethyl Ketone	72.1	71	250	0.805	24
Mineral Spirits	142	7	500	0.76	105
Nitrobenzene	123.11	—	1	1.1987	190
Octane	114.23	120	500	0.706	63
Perchloroethylene	165.85	14.4	200	1.631	none
Tetrachloroethane	167.86	9	5	1.588	none
Toluene	92.13	22	200	0.866	40
1, 1, 1 Trichloroethane	133.42	101	500	1.33	none
Trichloroethylene	131.4	56	200	1.47	none
Turpentine	136	4.4	100	0.865	95

icals, the more exact the industrial hygienists can be in setting a threshold limit.

One thing troubles me about this M.A.C. value or threshold limit value. Many of us are inclined to lean too heavily on the M.A.C. without taking into consideration other factors associated with a chemical's potential hazard.

The M.A.C. tells us how much solvent we can safely breathe. This measurement is concerned with the toxicity of the material and tells us nothing about the tendency of this chemical or safety solvent to contaminate the atmosphere and, thus, become a hazard.

Suppose we have Chemical A with an M.A.C. of 10 and Chemical B with an M.A.C. of 500. You notice immediately it is possible to breathe in 500 ppm of Chemical B and still feel secure about it.

As far as Chemical A is concerned, you would be careful with it and make sure you didn't breathe in much of its vapor, because even 10 ppm will represent a hazard. Therefore, Chemical A is much more toxic.

Let's assume Chemical B is a fast-evaporating or volatile solvent like gasoline, and that Chemical A is a waxy substance which will not evaporate unless it is heated to a very high temperature.

Under normal conditions at room temperature, Chemical A

remains a wax and will not contaminate the air we breathe, while Chemical B evaporates most readily and in a confined area will easily reach its 500 ppm M.A.C. in a short time.

Under those conditions, the hazard associated with Chemical A is far lower than the hazard associated with Chemical B, even though the M.A.C. for Chemical B is lower than for Chemical A.

It is extremely important to consider carefully the conditions under which a product is used, so its tendency to reach its M.A.C. under those conditions can be evaluated.

Certainly, a fast-drying solvent will quickly evaporate into the atmosphere and contaminate the air we breathe. Vapor pressure is the technical term referring to tendency to evaporate. A high vapor pressure represents a rapid rate of evaporation. A low vapor pressure characterizes a slight tendency to volatilize or evaporate.

You may say, "Let's choose a safety solvent with a high M.A.C. and a low vapor pressure." That would be fine, except a low vapor pressure would mean a solvent would not want to evaporate and might remain as an oily film on the surface being cleaned.

Your production department will usually want to work with a safety solvent cleaner that will evaporate fairly quickly. Your

—To page 85

TABLE I

Volume in ml needed to reach MAC in a room 10 x 10 x 10 ft.

Solvent	Volume (ml.)
Carbon Tetrachloride	2.8
Benzene	3.62
Methyl Alcohol	9.42
Trichloroethylene	20.8
Toluene	24.7
Methyl Ethyl Ketone	26.1
1, 1, 1 Trichloroethane	58.4
Ethyl Alcohol	67.8
Acetone	85.5

# IDEAS THAT WORKED

## Devices and Ideas to Help Your Safety Program

By Arthur S. Kelly, Industrial Department, NSC

### Pseudo Baseball—Batter Up!

Here's a game the safety committee at Vanadium Corporation of America, Cambridge, Ohio, developed to pep up safety committee meetings and to teach safety at the same time. The game is called Pseudo Baseball.

A regulation baseball diamond is laid out on cardboard, plywood, or similar material. The size can vary but is most convenient when the diamond fits a desk or table. Cards or blocks or other tokens represent players, each of whom is given one of these symbols.

As few as three or as many as nine players on each team can play at one time. If there are more than 18 in the game, the extras can pinch hit. The committee chairman sitting at the head of the table acts as umpire and timer; his decisions are final.

Teams are selected by drawing names from a hat. Captains are chosen by each team, and these leaders toss for first bat. The game is seven innings, or longer if the score is tied at the end of seven innings. It is usually impossible to finish a game at one session, since there is a 15-minute time limit to allow for other committee business. Incompleted games are continued at the next meeting or meetings until the game ends.



The pitcher, sitting at the head of the table opposite second base, pitches written safety questions to the batter. Information on paper includes the question, question number, and the value of the correct answer in bases allowed. An easy question is worth a single. A more difficult question is tallied as a double, and so on up through home runs. Questions are furnished by the safety department.

The chairman-umpire has a complete list of questions by number, along with correct answers and their values. If a batter answers a question correctly, he moves his token to the base indicated.

A batter is out if he answers incorrectly, takes more than five seconds to start answering, gives an incomplete answer, or receives help from a teammate. In receiving help, the entire side is retired automatically.

A batter walks if he is interrupted by an opponent while answering. A balk occurs if the pitcher reads the question incorrectly; the batter is then allowed one base.

*Submitted by W. T. Johnstone, safety director, Vanadium Corporation of America, Cambridge, Ohio.*

### PRIZEWINNING IDEA FOR AUGUST

August's winner was "Do It With Mirrors." This idea was submitted by R. A. Koy, personnel superintendent, U. S. Gypsum Co., New Orleans, La. Mr. Koy's idea is to rotate a simulated "camera" through all departments, while urging employees to see the man who could keep them safe. A peek by a worker in the oblong hole cut in back of the camera shows him his own reflection in a mirror mounted at the front end of the camera.





### Colored Signal Gloves

To make the signalman's signals easier for crane men to see, riggers at this firm get gloves with the fingers colored yellow and black. At first this effect was achieved by painting or dyeing the glove fingers, but the color was soon obscured by dirt.

Finally, the idea popped up to use tubular gauze No. 2, dyed yellow and black. The tubular bandage is taped on each finger.

Submitted by John H. Flaherty, safety supervisor, McKiernan-Terry Corporation, Harrison, N. J.

### Sign Chases Accidents

A portable sign that seems to chase accidents has alerted workers for this firm, whenever a mishap occurs on company premises. When an accident takes place requiring medical attention, whether time is lost or not, this sign is immediately positioned at or near the scene of trouble.

This sign constantly emphasizes to those in the vicinity the importance of continuous safe work practices. The hand in the top half of the sign is red, while the hand in the bottom half is green.

Submitted by R. A. Koy, personnel superintendent, U. S. Gypsum Company, New Orleans, La.



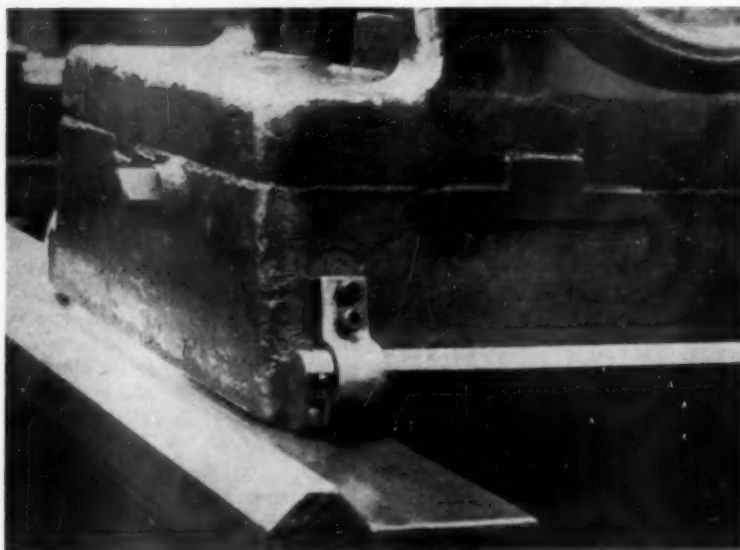
### Roller Moves Tailstock

Brute strength is usually the chief requirement in moving tailstocks on many lathes, especially those of the older, heavier types. Smaller workers have a difficult time completing this operation.

However, with offset rollers

pinned to the hexagonal stock and bracketed as shown in this photograph, moving the tailstock is made simple and easy.

Submitted by H. E. Thomas, head of the safety department, Ford Motor Company, Ltd., Dagenham, England.



### "ASK AND YOU WILL RECEIVE"

A. S. K. is ASKing you to send in ideas that worked to be published in "Ideas That Worked."

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A. S. Kelly

### 89 NEW PRIZES FOR IDEAS!

Winners of NSC monthly and semi-annual "best ideas" contests now can select one of 89 new prizes, including a personalized copy of the *Accident Prevention Manual*, from a list of individualized home, recreation, and sport items. Value of the awards remains the same as in previous competitions. For the best idea printed monthly, we will present \$15 worth of merchandise. Prizes totaling \$25 will go every six months to the best of the monthly winners.

Monthly awards now available include clothing accessories, tool attachments, and carving sets, plus electric wall clocks, picnic utensils, pup tents and fishing reels. Six-month prizes range from electric shavers and skillets, attaché cases, and automatic coffee makers to golf bags, plastic wading pools, and battery chargers.

Send a brief description with a photo or drawing to "Ideas That Worked," National Safety Council, 425 N. Michigan Ave., Chicago 11. Any program or safety promotion idea, gadget, or home-grown invention that prevents accidents in your plant is eligible.

# AROUND THE COMPASS



ACTIVITIES • PROGRAMS • EVENTS

By Nils Lofgren

Field Service Department, NSC

## State and Local News

Women parking checkers, better known as Meter Maids, of Seattle, Wash., were honored at a July 10 breakfast sponsored by the Seattle-King County Safety Council. Speakers at the affair were Agnes Beaton, director of women's activities for the Automotive Safety Foundation, and Bill Conner, director of the Portland Traffic Safety Association.

The Council recently publicly commended the city government and particularly the Public Safety Committee of the Seattle City Council for the stand the committee took on the matter of safe water skiing and boat safety.

\* \* \*

The Chattanooga (Tenn.) Area Safety Council became a division of the Chattanooga Chamber of Commerce on June 2.

\* \* \*

At their Annual Industrial-Fleet Awards Banquet on June 3 the Worcester County (Mass.) Safety Council gave recognition to the outstanding safety records of 21 area industries, 6 fleet companies, 2 individuals, and more than 1,000 individual drivers.

More than 40 of the 60 towns in Worcester County are participating in a traffic safety program sponsored by the Safety Council, the Emergency Action Committee on Highway Safety, and the Bancroft Automobile Club.

The driver education school conducted by the Worcester County Safety Council and the Worcester Police Department is now in its sixth year and on its eighteenth course with an accumulated attendance of more than 5,000 persons.

"Attention All Motorists! . . . Here Is A Traffic Condition Red Announcement! Attention All Motorists! Today is one of the most dangerous periods of this week-end holiday. Condition Red, a traffic alert designed to save lives, is now in effect."

This is the opening of one of the Condition Red radio spots distributed for summer holiday use by Robert A. Campbell, coordinator of the Illinois Division of Traffic Safety.

Condition Red news releases were prepared and sent to chiefs of police and sheriffs for local newspapers, TV and radio stations.

The Traffic Safety Division has prepared a thorough and attractive compilation of traffic accident data for all newspapers in Illinois. In addition to the usual breakdown of accident data, the booklet includes information on causes of Illinois accidents, the status of driver education in Illinois, on available safety services, and a summary of the state's traffic safety needs.

Among the 48 states, Illinois has one of the largest reductions in traffic fatalities so far this year.

\* \* \*

Lloyd M. Felmly, editor of *The Newark Evening News*, has been elected president of the New Jersey State Safety Council, succeeding Harold G. Mangelsdorf of Standard Oil Company (New Jersey).

Mr. Felmly has been editor of *The Newark Evening News* since its formation in 1947. He is also president of the Board of Trustees of Lafayette College in Easton, Pa., and is a member of the board of managers of the Howard Savings Institution.

## Massachusetts Changes Rule for Students

Massachusetts' Registrar of Motor Vehicles, Clement A. Riley, has announced a change of procedure in the high school driver education program. He hopes this change will make it possible for every eligible student in the public, parochial and private schools of the Commonwealth to complete a full course in driver education and, thereby, qualify for a driver education certificate.

Students may complete classroom instruction at their respective schools and then obtain driving instructions in six months at any commercial driving school, which, after careful screening by the registrar's staff, has been issued a special license to give this instruction to high school students. Holders of such certificates or their parents are entitled to a considerable reduction on automobile insurance premiums.

The registrar's plan is intended to supplement and not to supplant existing high school driver education programs.

\* \* \*

From the office of W. A. Hugins, executive secretary of the Governor's Traffic Safety Committee of California, has come an Information Kit for speakers and writers on traffic safety.

The kit is about the size of a coat wallet and opens up into two pockets, each with 12 cards of descending size so the captions are all visible at once—each on separate aspects of traffic accidents and their prevention.

The last point under the heading "So You're Going to Talk About Traffic Safety," is "Observe the 4 S's: Stand Up! Shut Up! Speak Up! and Sit Down!"

# Inert Gas Shielded Arc Welding

Published by National Safety Council,  
425 North Michigan Avenue, Chicago 11

## Uses

1. Inert gas shielded arc welding is a process ideally suited for joining metals which oxidize easily at high temperatures or those on which oxides formed during the process would interfere seriously with the soundness and quality of the weld. This welding process is used occasionally on carbon steel, as well as on easily oxidized metals such as copper, aluminum, and stainless steel.

2. Inert gas shielded arc welding is also used in welding steel parts on which oxides in the form of scale at and adjacent to the weld would interfere with further processing of the parts, such as painting, plating, or machining.

## Hazards

3. It is the purpose of this data sheet to call attention to some of the special hazards of inert gas shielded arc welding and to emphasize precautions which should be taken.\*

4. Some of the inherent hazards of inert gas shielded arc welding are:

\*Most of the hazards common to all types of welding are discussed in the *Accident Prevention Manual for Industrial Operations*, National Safety Council; Standard Z49.1-1958, *Safety in Welding and Cutting*, American Standards Association, New York 17, N. Y.; and A6.1-55T, *Recommended Safe Practices for Inert-Gas Metal Arc Welding* (Tentative), American Welding Society, New York 18, N. Y., 1955.

This Data Sheet is one of a series published by the National Safety Council, reflecting experience from many sources. Not every acceptable procedure is necessarily included. Data Sheets should not be confused with American Standard Safety Codes, federal laws, insurance requirements, state laws, rules and regulations, or municipal ordinances.

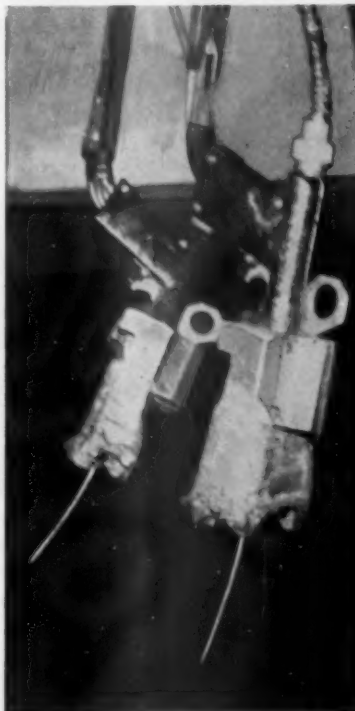


FIGURE 1. Gun-type welding units with inert gas tubes and electrical leads attached. Welding electrodes are pulled out extra length for display purposes. (Courtesy Cadillac Motor Car Division, General Motors Corp.)

- a. Ultraviolet and infrared radiation of high intensity.
- b. Handling of high-pressure inert gas in cylinders and manifolds.
- c. Action of ultraviolet rays on chlorinated solvents in the area.
- d. Liberation of toxic and noxious gases and fumes.

## Ultraviolet Radiation

5. A relatively large amount of ultraviolet radiation is produced in this type of welding operation. The inert gas shield around the arc doubles the intensity of the ultraviolet radiation. The higher current densities required, particularly when a consumable electrode is used, increase the intensity still more. Thus, with inert gas, the ultimate intensity of ultraviolet radiation is five to thirty times greater, and infrared radiation one and one-half times greater, than occurs with conventional metal arc welding.

6. The production of ultraviolet radiation, ozone, oxides of nitrogen, and metal fumes is greater with the consumable electrode than with the tungsten electrode and greater with an argon gas shield than with a helium gas shield. Therefore, when either a consumable electrode or an argon gas shield is used, the radiation dangers to exposed skin and eyes, as well as the space range of the hazard, are increased.

7. With greater radiation, the danger of skin burns is increased, and conjunctivitis will be produced with shorter exposure and at greater distance from the arc.

## Handling of High-Pressure Inert Gas

8. Argon and helium are the inert gases most commonly used to shield the welding zone from the atmosphere. Since argon ex-

ilar to oxygen cylinders and labeled with the name of the gas. Cylinder pressures range from 2,200 to 2,640 pounds per square inch. Argon and helium cylinders should be stored and handled with the same safety precautions as



**FIGURE 2.** Gun-type unit being used for gas shielded arc welding of a structural part. (Courtesy A. O. Smith Corp.)

cels helium in that it (a) has greater density, (b) does not mix with the surrounding air as rapidly, and (c) has greater arc stability at lower voltages, it is more widely used than helium or a mixture of argon and helium. Argon is also used more widely than a mixture of argon and oxygen. Carbon dioxide, although not an inert gas, is sometimes used as a shield gas when welding steel by the gas shielded arc welding process.

9. The inert gases are commercially available in cylinders sim-

ilar to other high-pressure gas cylinders.

10. Carbon dioxide is usually supplied in partially liquid and partially gaseous form in cylinders at approximately 835 psi pressure. Cylinders of carbon dioxide should, therefore, be handled like other high-pressure gas cylinders.

11. A pressure-reducing regulator must be used to lower the pressure to the amount recommended by the flow meter manufacturer, usually 25 psi or less. A flow meter should be installed in

addition to the regulator, so that the flow of gas can be accurately controlled. If more than one torch is used from the same gas line, a flow meter should be installed at each torch connection.

## Chlorinated Solvents in the Area

12. Radiation from the arc causes rapid, almost instantaneous decomposition of the vapors of chlorinated solvents such as trichloroethylene and perchloroethylene, resulting in the formation of noxious gases, including phosgene gases. For this reason, all chlorinated solvents in the area where welding is done should be stored in closed containers, well away from the welding operation—preferably in a separate room. Welding should not be done near degreasing equipment containing such solvents.

13. Special precautions must be taken when chlorinated solvents (such as trichloroethylene and tetrachloroethylene) are used for degreasing metals prior to welding, to make certain that there is no residual solvent on the parts to be welded.

## Toxic and Noxious Gases and Fumes

14. Toxic and noxious gases and fumes may be liberated when certain types of materials are used in or created during welding operations. These materials include cadmium, beryllium, ozone, and thorium oxide (from thoriated tungsten electrodes). Fumes may also be liberated from fluorides that are present in fluxes used in welding.

15. The health hazards created by metallic fumes are not commonly encountered. Nevertheless, since inhalation of certain of these air-borne contaminants can be extremely dangerous, every effort must be made to prevent exposure. If a person is suspected of inhaling cadmium, beryllium, or thorium oxide fumes or ozone, a qualified physician should be summoned immediately.

16. The toxicity hazard from



cadmium is greatest when it is overheated and the cadmium oxide fumes thus formed are inhaled. Most cases of cadmium poisoning occur when welding operators mistake cadmium-plated steel for galvanized steel and do not take sufficient precautions against the fumes.

17. The effects of cadmium fumes on the body are slow to appear. The first symptoms of continued exposure may be dryness of the throat, irritation of the eyes, and tightness in the chest. Very often these symptoms are so mild that a welder is not aware of the fact that the atmosphere is contaminated.

18. Longer exposures may cause severe chest pains, abdominal pains, discoloration of the

skin, and nausea. Prolonged exposure to cadmium oxide fumes may prove fatal.

20. The fumes, dust, and mist of beryllium and beryllium-bearing alloys are highly toxic. Exposure to air contaminated with beryllium may result in either an acute or a chronic type of lung disease.

21. Beryllium fumes can be toxic even in very small quantities—the A.C.G.I.H.\* has established a tentative value of 2 milligrams per cubic meter of air as maximum acceptable concentration for an 8-hour exposure. If beryllium alloys are to be welded, effective local ventilation is mandatory, and every precaution must be taken to ensure that both the welders and the personnel in and outside the work area are not

required for inert gas shielded arc welding. If a flux containing fluorides is used, the necessary precautions must be observed.\* Since such a flux when heated gives off fumes irritating to the eyes, nose, and throat, the work area must be well ventilated.

23. Ozone is a form of gaseous oxygen produced by the high ultraviolet radiation effects on the oxygen in the air. It is not produced by the shielding gas itself.

24. Ozone may be present in many welding operations, although hygienically significant concentrations have been observed only in inert gas shielded arc welding. The amount produced varies with the type of metal and gas used, the amperage, and the atmospheric humidity. An excessive flow of the shielding gas will result in the formation of larger amounts of ozone because under such conditions larger amounts of radiation are transmitted to the air. If welding is done in confined spaces, the ozone concentration may reach a harmful level.\*\*

25. Ozone is classified as an irritant gas. Prolonged inhalation in concentrations above 0.05 part per million parts of air by volume is inadvisable because of the danger of pulmonary irritation. Odor threshold is 0.01 to 0.05 ppm. Ozone has no cumulative effect. Its first effects are on the membranes of the respiratory tract, but it also causes dryness of the skin and headache.

26. The question has been raised as to whether a toxic atmosphere may develop in electric welding operations through the use of thoriated tungsten elec-



FIGURE 3. Battery of cylinders containing inert gas. Uncapped cylinders (at right) are connected to a high-pressure manifold and gauge. (Courtesy Cadillac Motor Car Division, General Motors Corp.)

subject to hazardous concentrations of the fumes.

22. In some cases, flux may be

\*The American Conference of Governmental Industrial Hygienists.

\*See discussion under heading "Ventilation and health" in chapter entitled "Welding and Cutting," *Accident Prevention Manual for Industrial Operations*, National Safety Council.

\*\*Ventilation data established by the American Standards Association can be found in Standard Z49.1-1958, *Safety in Welding and Cutting*, American Standards Association, New York 17, N. Y.

trodes under usual working conditions. A study of this problem was made by the Health and Safety Division of the Atomic Energy Commission.

27. The American Welding Society's Committee on Safety Recommendations, reporting the results of this study, stated: "The

from the inhalation of carbon dioxide or carbon monoxide since the welder does not work with his head directly in the path of the fumes. Under these conditions, ventilation adequate to control the fumes would be provided by facilities normally used for conventional metal arc welding.



**FIGURE 4.** Production setup for making circular welds on automotive parts. A part to be welded is shown clamped on rotating table (under asbestos curtain that is raised to expose point of operation). Another part that has received weld lies displayed on table. Carbon dioxide is used as the inert gas shield in this operation. (Courtesy Oldsmobile Division, General Motors Corp.)

atmospheric content of thorium in electric welding using thoriated tungsten electrodes is well below the maximum allowable concentrations."

28. Carbon dioxide is dissociated by the heat of the arc to form carbon monoxide. While the total amount of carbon monoxide formed is small, relatively high concentrations are found in the cone of the fume. Concentrations ranging from 400 to 1,500 ppm have been found in the smoke cone at a distance of 18 inches to 24 inches from the arc. However, at distances of more than 3 or 4 inches from the smoke cone, concentrations are insignificant.

29. There should be no hazard

### Protection of Personnel

30. For protection against radiant energy and eye irritation, welding helmets should be worn. Protective goggles or spectacles with side shields and No. 2 shade lens should be worn under the helmet so that the operator will have protection from stray flashes and reflected ultraviolet light. The shades of filter plates for helmets recommended for various current ranges are as follows:

PLATE SHADE NUMBER	CURRENT RANGE (Amperes)
9	5 to 75
10	75-200
11	75-200
12	200-400
13	200-400
14	above 400

31. Other persons in the direct path of the arc rays should have the protection of a helmet or should at least wear tinted goggles. It is suggested that the lens tint be at least shade No. 2.

32. Operators and other persons working with inert gas shielded arc welding should keep all parts of the body which could be exposed to the ultraviolet and infrared radiation covered to protect against skin burns or other types of injuries. Dark clothing, particularly a dark shirt, is preferable to light-colored clothing in order to reduce reflection to the operator's face underneath the helmet.

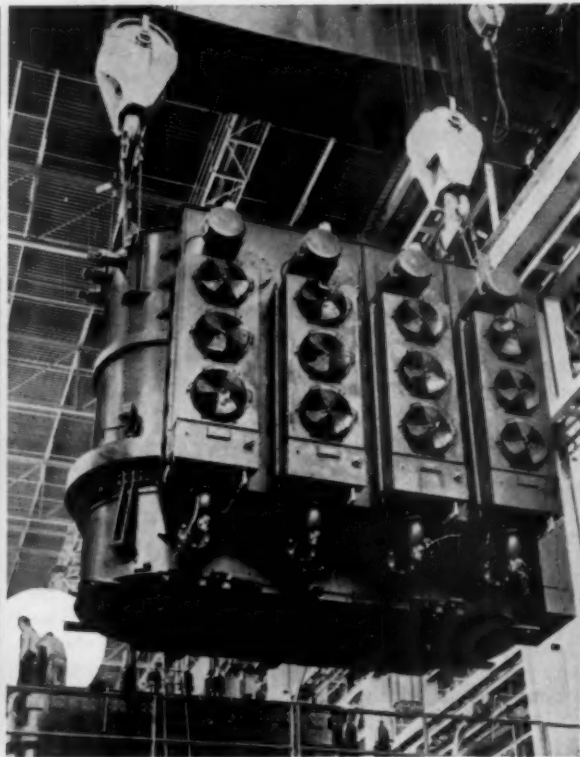
33. It has been stated that in the presence of the arc cotton clothing disintegrates in from one day to two weeks, presumably because of the ultraviolet radiation. Wool or leather clothing, therefore, is preferable to cotton because it is more resistant to deterioration.

34. Shirt sleeves should be kept rolled down at all times, and flameproof gauntlet gloves should be worn to protect the hands.

35. All inert gas shielded arc welding operations should be effectively screened for the protection of passers-by or other individuals in the area. Each welding station should be in a separate screened booth to protect neighboring workers from the effects of arc rays. The booths should be painted with a dull nongloss paint to minimize reflection.

### ACKNOWLEDGMENT

This data sheet was prepared by the New Jersey Chapter of the American Society of Safety Engineers. It has been extensively reviewed by members of the National Safety Council and representatives of chapters of ASSE. It has been approved for publication by the Publications Committee of the Industrial Conference of the National Safety Council.

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Your rigger knows that different loads need different slings because of varying factors such as shape, weight, material, finish, protruding sharp corners, extremes of temperature.

On some jobs chain is best. On others the characteristics of wire rope make it the first choice. On still other jobs, wise riggers know that combinations of chain and wire rope will provide the greatest lifting economy.

No matter what type is called for, you can be sure of the safest slings and the best values in Acco Registered Slings. From this one source you can get unbiased information based on actual know-how.



And you can get the exact slings your rigger should have.

One of the recent improvements is the new shaped Master Link now provided without extra cost on all Acco Registered Slings, chain or wire rope. This link gives 18% greater resistance to distortion with no increase in weight. It is another reason why Acco Registered Slings are recognized as the standard of efficiency and safety.

All Acco Registered Slings are proof-tested, registered and identified for your greater assurance of safety.

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Tell your distributor you'd prefer Acco Registered Slings.

**WHAT  
"ACCO REGISTERED"  
MEANS**

- 1 The best material
- 2 Unit safety factor (on bodies, rings, links, hooks)
- 3 Proof test of complete sling to twice the working load limit
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- 5 Metal identification ring or tag on each sling
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Circle Item No. 11—Reader Service Card

**ACCO**

# OFF THE JOB

## Safety programs for plant and community

By Harry C. Johnson  
NSC Staff Representative  
OTJ Safety Committee

### Relax in Safety

*We are happy to present the following article, "Relax in Safety" from The Southern California Edison Safety News. Are you this person, that can relax? I doubt it.*

One of the very oldest sayings we have is "safe at home." Probably it started in cave man days, but not because there weren't plenty of ways to get hurt in those caves. But compared to the dangers outside, caves were pretty safe places.

That saying is still good today, but not nearly as good as it should be. If you doubt that, here's the record. Very nearly twice as many are killed in their homes each year by accidents as are killed on the job. Disabling injuries run in about the same proportion.

It is true that the injury rates in many plants are lower than in a great many homes. Those would be the plants where managements are very safety minded and whose employees are, also. Those are the plants with really good safety records.

There is just no excuse for so many home accidents. The reason, of course, is simply lack of safety mindedness. Many women seem to lack it. Of course, the kids haven't got it yet, that is, not unless their dads have brought their safety mindedness home with them and use it and dish it out.

Some schools are trying to include safety along with other things they teach, but none do nearly enough of it. It is hard for them, though, because they have so much to do, so many things to teach.

Home accidents result almost wholly from ignoring common everyday hazards—the sort of things that are easily seen and easy to take care of. Then why aren't they? The answer seems to be that few dads (or mothers) take the trouble. Probably very few realize how many home ac-

cidents there are. And even if a neighbor falls down the stairs or his kid breaks an arm, few dads seem to take it as a warning.

The descriptions of home accidents almost always point to the same thing. The failure of parents to keep a lookout for the common everyday kind of hazards and do something about them. Instead, the average dad just goes home and "relaxes in safety," or so he thinks. It doesn't seem to occur to him that his home might be full of the kind of hazards that could hurt his wife, his kids, or himself.

What should a man do? First of all, he should apply the safety know-how he has gained on the job as far as it will fit. Most of all, he should use his head. He should inspect his home from attic to basement, inside and out, the yard—everything.

What accident possibilities are there? Who can get hurt, and how? What can be done about each hazard? What safety instructions can be given each member of the family? What is the best way to give it so that it will get across?

Any dad (or mother) who asks himself these questions can work out the answers.

Why not make a thorough inspection of your home this week end? It's really an interesting job. There aren't too many kinds of hazards.

Falls lead the list of home accidents. They happen on stairs, slippery floors, loose rugs, and back and front stoops and steps. Tumbles occur from stools and things the women get up on to hang curtains or clean high shelves. Falls result from tripping over playthings or other loose objects on the floors or stairs, and so on.

There are many burns. Saucepan handles sticking out from the stove top are open invitations to little toddlers to grab them. Overheated grease does much damage. Smoking in bed kills its share of people each year.

Then there are tool hazards, poisons, fires, and so on. All can easily be found and taken care of. Inspect, correct, teach safety at home. Then you can relax in safety, but only then.

### Industries Urged to Participate in Home Safety Inventory

Late this year, industries throughout the country will once again be asked to report their off-the-job safety activities as part of the 1958 Home Safety Inventory. Questions concerning the statistical scope of their off-the-job program, extent of community-wide participation of their safety activities, will be among those included

—To page 95



Courtesy Sinclair Oil and Gas Company





## THE BIG SQUEEZE IS ON!

No doubt about it . . . you wouldn't let such a character loose in your plant for all the tea in China. But stop and think a moment and you will realize he is just as well off *barefoot* as he would be wearing *regular* shoes. He would still be a dead pigeon! Leather alone offers no protection when THE BIG SQUEEZE IS ON.

REMEMBER . . . It's the *steel toe* that makes a shoe safe. You can always rely on the new improved WINGUARD steel toes to give your workers the maximum protection and comfort in their safety shoes. There is a specific safety shoe designed for every industrial purpose and your safety shoe supplier will be glad to help you make the right selection for your worker's needs.

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A PROGRESS REPORT OF INDUSTRIAL FOOT PROTECTION

*It's perfect for the man who is continually on his feet.*

### H985

Tan sides Quilon-treated upper; plain toe 8" blucher boot; brown Resist-Oil Cellular Grit sole and flat wedge heel; storm welt; leather laces; completely Dacron stitched; Director last.

B - 7-12, 13;  
C - 6-12, 13;  
D, E, EEE -  
5-12, 13



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Circle Item No. 12—Reader Service Card

# THE SAFETY LIBRARY



**Books, pamphlets and periodicals of interest  
to safety men**

**Compiled by Ruth Parks, Librarian, NSC**

## Industrial Noise Manual

*The Industrial Noise Manual.* The American Industrial Hygiene Association, 14125 Prevoist, Detroit 27, Mich. 184 p. April, 1958, \$7.50.

THIS MANUAL has been compiled by a committee of specialists in the field of industrial noise and is the first manual to be published in a series on industrial hygiene subjects planned by the American Industrial Hygiene Association.

The manual is primarily for the industrial hygienist and discusses the physical characteristics of noise, measurement and control of noise, and the effect of noise on exposed persons. The authors have drawn from their personal

experiences and scientific literature to produce a much-needed handbook, not only for the field of industrial hygiene but also for engineering and safety.

Ten chapters cover basic aspects of the problem of industrial noise, including background material on the nature and perception of sound—essential to proper understanding of the subject. Other chapters discuss instruments, sound measuring techniques, instrument calibration, the effects of noise, medical aspects of noise, and personal protection.

The chapter on Engineering Control of Noise, containing 69

pages of information on various noise control measures, is valuable enough to make this a worthwhile manual for anyone confronted with noise problems.

E. L. ALPAUGH

## Safety in Dock Work

*Safety and Health in Dock Work* (an ILO Code of Practice). International Labour Office, Geneva, Switzerland. 1958. 125 p., with index. \$1.00.

THIS CODE is supplemental to the Protection Against Accidents (Dockers) Convention adopted by the International Labour Conference in 1932. The code was prepared by the director-general of ILO in consultation with experts and at the direction of ILO's Governing Body following suggestions made by the International Transportworkers' Federation.

Authorities from 13 different countries, including the U.S.S.R., considered the text at the International Labour Office December 3—21, 1956. Representing the United States was Ralph W. Netterstrom of the Bureau of Labor

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PROTECTION**

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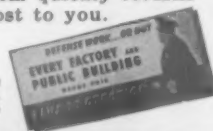
## CHICAGO Watchclock System

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**LOWERS YOUR INSURANCE RATES!**



It keeps track of your watchman's tracks—so accurately and positively that the CHICAGO WATCHCLOCK System is approved by THE UNDERWRITERS' LABORATORIES and by THE FACTORY MUTUALS LABORATORIES. Users earn reduced insurance rates. Thus the CHICAGO WATCHCLOCK System quickly returns its small cost to you.

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**Saturday and Sunday, it's a DRESS SHOE!**

Why does a safety shoe have to *look* like one? Answer: It *doesn't*! This Thom McAn safety shoe offers the full protection of leather-lined steel toe boxes and oil-resistant, slip-resistant Neoprene Nitro-Crepe sole and heel. Yet, it's smart enough to make an excellent *dress* shoe for evenings and

week-ends. With shoes like this, you can get many more of your men into safety shoes. Thom McAn has a full line of these dual-purpose safety shoes, as well as special-purpose safety shoes. For descriptive literature and a set of our talked-about safety posters, mail the coupon now.

Shown: Style S4300, brown U-wing dress oxford. Sizes A 8 to 12. B 8 to 14. C 6 to 13. D, E, EE, EEE 6 to 12.

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Circle Item No. 14—Reader Service Card

# IMPORTANT SAFETY NEWS

## New line of North PVC industrial clothing and gloves



### FEATURES

- **Tough**—last two to five times as long
- **Flexible**—allow full freedom of movement
- **Resistant**—withstand chemicals, oils and solvents; nonflammable and waterproof

Seams are stitched with strong chemical and heat resistant thread, then shielded and electronically welded for liquid-proof security.

Pliable plastic buttons are electronically welded in place, providing greater strength than sewn types.

Raglan sleeve design and generous cut mean extra comfort.

North PVC fabric has excellent abrasion and snag resistance.

Garments are non-aging, nonoxidizing and nonflammable—remarkably easy to clean.

Safety fly front available with welded buttons, snap fasteners or zipper closure.

Gloves have a knitted interlocked fabric lining and are made with a special PVC compound providing great flexibility and two to five times the life of ordinary types.

The complete North PVC line includes industrial gloves, aprons, rain wear, and a wide range of protective clothing of all types. Write today for complete information.

## JOMAC Inc.

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Standards, U. S. Department of Labor.

Most experts present were governmental officials, consultants or inspectors, plus three union representatives, one industrial representative (Japan) and three representatives of the World Health Organization.

The Code's introduction said: "The Office had conceived the code of practice not as a set of regulations but as a guide consisting of a body of concise recommendations supplemented where appropriate by explanations, discussions and illustrations so as to endow it with the greatest practical utility."

The code deals principally with physical conditions and specifications related to the ship and dock, but safe practice is discussed. Scope of the book is indicated by a listing of its chapter headings: general provisions; wharves and quays; means of access to ships; transport of dockworkers by water; protection of hatchways; access to holds; decks; loading and unloading machinery and gear; loading and unloading operations.

Other chapter headings are: transport equipment and operations; lifting, carrying and piling materials; warehouses and store-places; dangerous substances and environments; personal protective equipment; medical aid and rescue; personnel facilities; selection and training of dockworkers; safety and health organization; miscellaneous provisions.

L. W. DUTTON

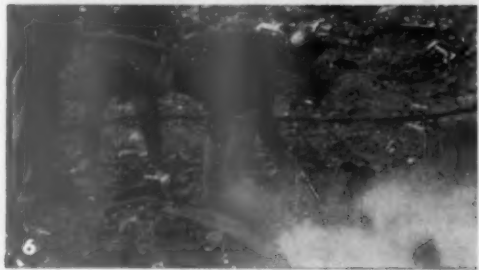
### Maintenance Practices in Petroleum Industry

*Successful Process Plant Practices*, by Robert L. Davidson. McGraw-Hill Book Company, Inc., 327 W. 41st St., New York 36. 312pp, 276 illus., \$10.

FEATURED in this book are a number of gadgets, gimmicks, and helpful hints used in petroleum refineries and petrochemical plants, and applied by operators, engineers and maintenance men to keep plants "on stream."

The publication has five parts: Managing the Job, Maintaining the Equipment, Handling Processes and Products, Protecting





# Rockwood WET

## *gets down to the root of problem fires!*

The deep-seated dump or peat fire is a problem faced by many cities and towns. It's an unpleasant, often very expensive problem requiring weeks of work to extinguish. Your town is probably no exception — but you can use exceptional products to extinguish deep-seated fires — the Rockwood Bayonet Piercing Applicator and Rockwood WET. The Rockwood Bayonet Applicator helps you pierce through top layers of debris and get at the heart of the fire. Rockwood WET, a wetting agent, increases the fire extinguishing action of water — making a little water go a long way. And Rockwood WET retains its penetrating action even at high fire temperatures!

With this fire-fighting team you save water, time and *quickly* control smoldering fires.

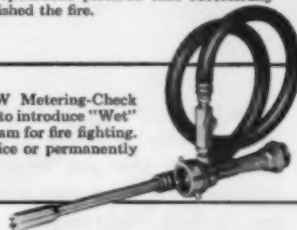
There are good reasons for you to investigate Rockwood WET and Rockwood Bayonet Applicator. So why not fill in the coupon below and let us send you full information?

Photo strip on left shows (1) Rockwood Bayonet piercing applicator ready for use (2) Rockwood Educator and Wet feeding wetting agent solution to Bayonet Nozzle (3) Bayonet being inserted at fire location (4) Bayonet partially inserted; note, steam rising from rubble (5) wet water reaches deep seated hot spot causing steam eruption and ground depression (6) Final steam cloud as hot spot is extinguished.



Earl C. Griffith, Chief of Fire Department, of East Providence, Rhode Island, was in charge of the operations pictured that successfully extinguished the fire.

Rockwood's All-Purpose new FW Metering-Check Valve and Educator was developed to introduce "Wet" or FOAM Liquid into a water stream for fire fighting. It can be used as a portable device or permanently installed on a fire truck.



## ROCKWOOD SPRINKLER COMPANY

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Circle Item No. 16—Reader Service Card

Equipment, and General Equipment.

Described in detail are practical suggestions on how to persuade workers to wear safety shoes and safety glasses, as well as building interest in safety programs.

Another section offers methods on repair of heat exchangers, how to retube exchangers quickly, and how to end-dress tubes with minimum effort.

The section on testing and inspecting contains details on a

continuous form for scheduling inspections and shows how to identify items and assemble a record book.

Indexed for fast reference, the entire publication is well illustrated with line drawings and photographs.

—L. C. SMITH

#### BOOKS AND PAMPHLETS

##### Construction

*Manual of Accident Prevention in Construction.* The Associated Gen-

eral Contractors of America, Inc., 20th and E. Sts., N. W., Washington, 6, D. C. 1958. \$3.25, plus postage.

##### Conveyors

*American Standard Safety Code for Conveyors, Cableways and Related Equipment.* The American Society of Mechanical Engineers, 29 W. 39th St., New York 18. 1958. 40pp. ASAB 20.1-1957. \$1.50.

##### Dust

*Preliminary Report on Humidity Changes in Train Bins During Inflow of Grain.* A. R. Morse. National Research Council of Canada. Radio and Electrical Engineering Division, Ottawa, Canada. 1958. 6pp. ERB-474.

##### Health

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*Portable Metal Ladders.* Underwriters' Laboratories, Inc., 207 E. Ohio St., Chicago 11. First edition. July 1958. 18pp. Standards for Safety —U.L. 184.

##### Marine

*Accidental Deaths Involving Small Boats in 1957.* Outboard Boating Club of America, 307 N. Michigan Ave., Chicago. 1958. 30pp.

##### Metals

*Safety Considerations for Handling Plutonium, Uranium, Thorium, the Alkali Metals, Zirconium, Titanium, Magnesium, and Calcium.* Office of Technical Services, Washington 25, D. C. 1958. 24pp. LA-2147—Health and Safety (TID-4500, 13th Edition Suppl.). 75 cents.

##### Mines

*Active List of Permissible Explosives and Blasting Devices Approved Before December 31, 1957.* U. S. Bureau of Mines, Publications Distribution Section, 4800 Forbes St., Pittsburgh 13, Pa. 1958. 10pp. Information Circular 7832.

*Engineering Control of Health and Safety Hazards in Uranium Mines.* U. S. Bureau of Mines, Publications Distribution Section, 4800 Forbes St., Pittsburgh 13, Pa. 1958. 20pp. Information Circular 7834. Free.

*Proceedings of the Coal Mining Institute of America, 1957.* Institute, 813 Mifflin Ave., Pittsburgh 21, Pa. 1958. 203pp. (75th Annual Report). \$1.50.

—To page 50

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Molded Design Sole available in Black & Brown, 14 iron flat.

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### Radiation

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—To page 54

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## SAFETY SOLVENTS

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**FORMULA 602** Dries twice as fast as mineral spirits. Flashpoint, 135°F. Twenty-four times safer than carbon tetrachloride. Good solvent power.

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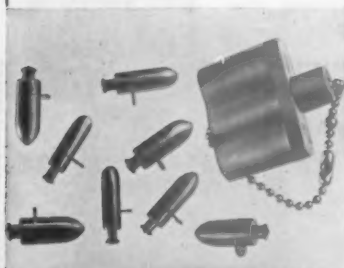
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TENAFLY, NEW JERSEY

## CUT DOWN NOISE

WITH THE S M R

## EARSTOPPER



Soft, comfortable, resilient, the SMR EAR STOPPER adjusts itself to all shapes, turns and movements of the ear canal. Tends to anchor itself in the ear. Has a long life and is reasonable in cost. Furnished in a plastic case. Forty-five cents per set in gross lots.

**SURGICAL MECHANICAL RESEARCH INC**



1905 Beverly Blvd., L.A. 57, Calif.

Free sample when requested  
on company stationery.

Circle Item No. 21—Reader Service Card

# COPPUS "BLUE RIBBON" VENTILATORS

identified by the blue band

## FOR WORKERS'

- Safety
- Health
- Comfort
- Efficiency

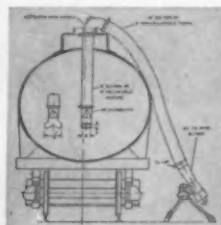
### VANO® Design "A" VENTILATOR



Vano Design "A" cooling interior of furnace, supplying fresh air through 10 feet of "Ventube" to provide safety and comfort during repair work.

Vano Design "A" delivering fresh air to cable manhole, expelling sewer gas, making entrance safe in a few minutes.

Vano Design "A" Ventilator plus a few accessories feeds large air volume into tank car, driving out fumes, stagnant or hot air for workers' safety and comfort.



Vano Design "A" supplying fresh air in Reactor Room of Synthetic Rubber Plant.

Vano Design "A" Ventilator supplying fresh air to men working in wing compartments, fuselages, etc.

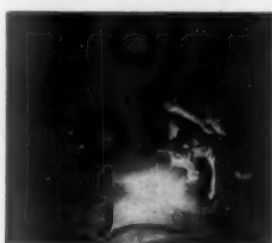


Powered by a 1/2 hp motor, and equipped with the exclusive Coppus axial-flow propeller-type fan, this general-purpose blower delivers 1500 CFM of fresh air. It supplies ventilation for tanks, tank cars, drums, vats, underground cable manholes, pipe galleries, airplane wing compartments and fuselages, and other confined places. Weighs only 103 lbs. Uses 8" diameter flexible canvas tubing ("Ventube").

### VANO DESIGN "C"



VENTILATOR-EXHAUSTER



Vano Design "C" equipped with 8" discharge tubing removing welding fumes.

Vano Design "C" equipped with two suction lines removing welding fumes for operators' safety.



For withdrawing welding fumes from confined places or directly from the welding rod ...or for expelling fumes or hot air from enclosed vessels. You can get it with 8" suction inlet for 8" non-collapsible tubing ...or with multiple inlet nozzles for 5", 4" or 3" suction hose. The discharge outlet takes 8" "Ventube". Powered by a 1/2 hp motor, it weighs only 85 lbs.

COPPUS ENGINEERING CORP., 129 PARK AVENUE, WORCESTER 2, MASS.

Please send information on the Blowers that clear the air for Action.

- ☐ in tanks, tank cars, drums, etc.
- ☐ in underground cable manholes.
- ☐ in airplane fuselages, wings, etc.
- ☐ on coke ovens.

- ☐ on steam-heated rubber processes.
- ☐ on boiler repair jobs.
- COOLING:**
- ☐ motors, generators, switchboards.
- ☐ wires and sheaths.

- ☐ general man cooling.
- ☐ around cracking stills.
- ☐ exhausting welding fumes.
- ☐ stirring up stagnant air wherever men are working or material is drying.

NAME .....

COMPANY .....

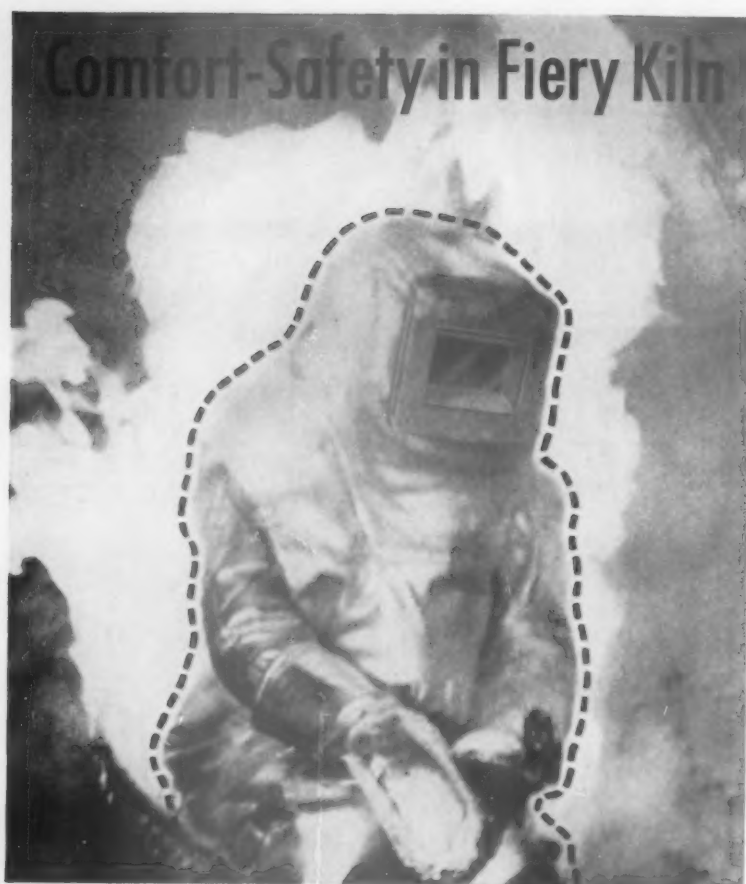
ADDRESS .....

CITY .....

(Write here any special ventilating problem you may have.)

COPPUS "BLUE RIBBON" PRODUCTS—Designed for Your Industry, Engineered for You

Circle Item No. 22—Reader Service Card



## Aluminized [Heat Barrier] Safety Garments cut costs, promote safety, give sure protection in highest temperatures

Lightweight, flexible, long-wearing garments made from 3M Aluminized Fabric provide greater safety—greater comfort—higher efficiency for men facing temperature exposures greater than 2000°F.

"It's the radiant heat that hurts" and Aluminized Fabric forms a heat barrier that reflects more than 90% of this heat. Industrial "hot spots" report of furnace and kiln repairs at operating temperatures without time loss for cooling . . . 30 to 50% longer garment life . . . higher resistance to molten spatter damage.

3M Aluminized Fabric is not a foil product, but a flexible coating of aluminum on a lightweight fabric. It is available from better safety clothing manufacturers. For further facts and samples, mail this coupon!

### Free Swatches

### ALUMINIZED FABRIC

Minnesota Mining and Manufacturing Co., Dept. NW-98, St. Paul 6, Minnesota

Please send me 3M Aluminized Fabric swatches and information.

Name Title

Firm

Address

City Zone State

"3M" is a registered trademark of Minnesota Mining and Manufacturing Company, St. Paul 6, Minn. General Export, 99 Park Avenue, New York 16, N. Y. In Canada: P. O. Box 752, London, Ontario.

#### Petroleum Industry

"Study Aids Offshore Safety." *Petroleum Week*. July 11, 1958. p. 38.

#### Power Trucks

"Lift Trucks Maintenance." *Pacific Factory*. June 1958. pp. 26-27.

#### Printing and Publishing

"Good Housekeeping and Maintenance Check-list for Printing Plants." (Foreman's Forum) *Printing Magazine*. May 1958. p. 84.

#### Pulp and Paper Industry

"Roll Handling with Automatic Conveyor Control System." Howard Stephenson. *Southern Pulp and Paper Manufacturers*. June 10, 1958. p. 52.

#### Quarries

"Electrical Maintenance—a Key to Good Shovel Operation." E. D. Elwanger. *Pit and Quarry*. June 1958. pp. 91-94.

#### Radiation

"Everybody's Business—The Problem of Fall-out and Radiation." C. W. Shelling. *Industrial Medicine and Surgery*. July 1958. pp. 349-353. (Sappington Memorial Lecture.)

"Military Aspects of the Biological Effects of Radiation." Nathaniel I. Berlin. *U. S. Armed Forces Medical Journal*. June 1958. pp. 821-842.

#### Railroads

"Diesels Spark New Shop Setup." *Modern Railroads*. May 1958. pp. 97-101.

#### Textile Industry

"Measure Fabric Temperature with a Radiation Pyrometer." B. B. Ritchey. *Textile World*. June 1958. pp. 89, 92-93.

#### Tools

"4 Steps to Top Tool Maintenance." Edward C. Knapp. *Factory Management and Maintenance*. July 1958. pp. 52-55.

#### Women

"The Pregnant Woman in Industry." Roma D. Reyner. *The American Journal of Nursing*. July 1958. pp. 999-1000.

#### ADDRESSES OF MAGAZINES MENTIONED

Readers are asked to send their requests for copies of magazine articles to the publishers, rather than to the NSC Library, which is unable to fill such orders.

A.M.A. Archives of Industrial Health, American Medical Association, 535 N. Dearborn St., Chicago 10

—To page 101



# **NOW!** from Bausch & Lomb, an **ALL-NEW** Cup-Type **GOGGLE LINE**



**NEW!** A complete, improved line of chippers' and welders' goggles in regular and coverall types!

**NEW** size, new safety-comfort contours, new visibility!

**NEW** super-tough thermo plastic material for new strength, new durability in high-luster cool green finish!

**NEW** efficiency features, cleanliness features, new interchangeability!

**NEW** value: all these features at no increase in prices!

BAUSCH & LOMB OPTICAL CO.  
90333 Smith St., Rochester 2, N. Y.

Please rush illustrated spec folder (A-1684) showing the all-new Cup Goggle Line.

NAME ..... TITLE .....

COMPANY .....

ADDRESS .....

**BAUSCH & LOMB**



**SAFETY**  
*Built into Your Wheel*  
**FIRST**



Conforms to ASA  
Safety Code require-  
ments for cupwheel  
guards

## CARROLL'S SAFETY-GUARD INSERTS

**Give you BUILT-IN  
Operator Safety and  
Top Performance.**

This radically new Safety Guard Insert with its integrated revolving guard gives you the all-important safety factor with increased wheel strength and efficiency.

Added economies in production are gained from the ready-made molding form provided by the Guard. True dynamic balance, back flatness and concentricity, show consistently close tolerances within .010 T.I.R.

Safe grinding wheels mean increased production — use and specify wheels with the new Carroll Safety Guard.

- A Positive Guard on Every Cup Wheel • Highest Safety Factor • One Piece Assembly • Increased Strength • Light Weight • Fool Proof Mounting • No Adjustment Necessary • True Dynamic Balance



Write for Information  
on Carroll's Safety  
Guard Insert

**CARROLL  
PRESSED METAL, INC.**  
133 DEWEY ST.  
WORCESTER 10, MASS.

Circle Item No. 25—Reader Service Card

## for DISTINGUISHED SERVICE



**Winners of National Safety Council  
Awards for outstanding records**

**1. THE AWARD OF HONOR** is available (a) to units which complete 3,000,000 man-hours without a disabling injury, and (b) to units whose records, though not perfect, meet vigorous standards of excellence. These standards take into account the previous experience of the unit as well as the experience of the industry in which it operates. A unit must qualify on both frequency rate and severity rate.

**2. THE AWARD OF MERIT** has similar, but less exacting requirements. Minimum number of injury-free man-hours needed to qualify is 1,000,000.

**3. THE CERTIFICATE OF COMMENDATION** is available only for injury-free records covering a period of one or more full calendar years and totaling 200,000 to 1,000,000 man-hours.

Details of eligibility requirements may be obtained by writing to the Statistics Division, National Safety Council.

### AWARD OF HONOR

City of Detroit, Mich.  
General Electric Company, Specialty Control Dept., Waynesboro, Va.  
J. P. Stevens & Co., Inc., two awards:  
Carter Plant, South Boston, Va.; Slater, S. C., Plant.  
Western Electric Co., Inc., New York Area, Telephone Sales Div., Install., New York, N. Y.

### AWARD OF MERIT

Aluminum Company of America, Rockdale, Tex., Works.  
The Borden Company, Southern Div., Oklahoma City, Okla., Plant.  
Cannon Mills Company, Plant 8, China Grove, N. C.  
Chrysler Corporation, two awards: Delaware Assembly Plant, Newark, Del.; Michigan Missile Plant, Detroit, Mich.  
Firestone Tire & Rubber Company, Firestone Textiles, Gastonia, N. C.  
General Electric Company, L&CE Dept., Erie, Pa., Plant.  
General Foods Corporation, Post Div., Kankakee, Ill., Operations.  
The Goodyear Tire & Rubber Company, two awards: Engineering Div. (L.M. 22), and Service Div. (R 93), both of Akron, Ohio.  
Grinnell Corporation, Columbia, Pa., Plant.  
Johnson & Johnson, Chicago, Ill., Plant.  
The Martin Company, Denver, Colo., Div.  
Minnesota Power & Light Company, Duluth, Minn.

The New Jersey Zinc Co., Inc., Palmerston, Pa., Plant.  
Ryan Aeronautical Company, San Diego, Calif.  
Sinclair Refining Company, Manufacturing Div., New York, N. Y.  
J. P. Stevens & Co., Inc., five awards: Appleton Plant, Anderson, S. C.; Aragon Plant, Rock Hill, S. C.; Carter Plant, Greensboro, N. C.; Nathaniel Plant, Dublin, Ga.; and Watts Plant, Wattsville, S. C.  
United Fuel Gas Company, Charleston Group, Columbia Gas System, Inc., Charleston, W. Va.  
U. S. Steel Corporation, American Steel & Wire Div., Donora, Pa., Steel & Wire Works.

### CERTIFICATE OF COMMENDATION

Acme Steel Co. of Canada, Ltd., Scarborough Plant, Toronto, Ontario.  
Acme Steel Co., Racine, Wis., Plant.  
Aetna Portland Cement Co., Bay City, Mich.  
American Brake Shoe Co., eight awards: American Brakeblock Div., Hillburn, N. Y.; Dominion Brake Shoe, Lindsay, Ont.; Railroad Prod. Div.: Chicago Heights, Ill.; Denver Colo.; Pomona, Calif.; Portsmouth, Va.; Superior, Wis.; Toledo, Ohio.  
American Can Co., 15 awards: A. D. Engraving & Process Plate 9A, Brooklyn, N. Y.; Atlantic Div. Lab., Newark, N. J.; Central Div. Lab 72A, Maywood, Ill.; Central Engraving &

Circle Item No. 26—Reader Service Card  
National Safety News, September, 1958



"Take a tip from me—

One slip can cost more than **USS Multigrip**"

**USS\* Multigrip Floor Plate** is specifically designed to help protect you against accidents from slips and skids. It will pay you to examine your plant or shop for possible accident-prone areas that could be made safe with Multigrip.\* For it provides traction for feet and wheels at all times—in all directions.

Where floor surfaces take a pounding, USS Multigrip supplies a rugged, long-lasting cover. It's made from heavy-duty plate that will last for years without maintenance. Studded with hundreds of risers

in a symetrically designed pattern, their flat tops provide a greater bearing surface, reducing wear and prolonging the non-skid properties. Rugged though it is, it's comfortable to walk on and safe, wet or dry.

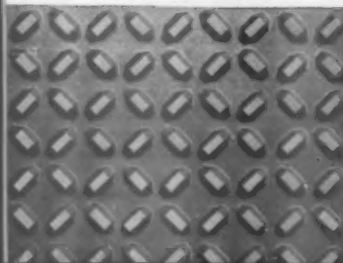
You save money on cleaning, too! A quick once-over with a broom or hose will get it spick and span. There are no pockets to hold dirt. Water drains quickly in any direction. Get USS Multigrip from our local distributor near you.

*Sold by leading distributors from coast to coast*

United States Steel Corporation — Pittsburgh  
Tennessee Coal & Iron — Fairfield, Alabama  
Columbia-Geneva Steel — San Francisco  
United States Steel Supply — Warehouse Distributors  
United States Steel Export Company



**United States Steel**



Process Plate 81A, Chicago Ill.; Closing Machine Station, Baltimore, Md.; Denver, Colo.; Harrisburg, Pa., Plant 7A; Plant 19A, Hoboken, N. J.; Kahului, Hawaii, Plant; Mach. Shop 33E, Niagara Falls, N. Y.; Plant 21A, Portland, Maine; Plant 102A, Salem, Ore.; Lab 101A, San Francisco, Calif.; Process Plate 95A, San Francisco, Calif.; Plant 60A, Terre Haute, Ind.

**American Cyanamid Co.**, seven awards: Charlotte, N. C., Plant; Damascus, Va., Plant; Georgetown, S. C., Plant; Kalamazoo, Mich., Plant; Michigan City, Ind., Plant; Mobile, Ala., Plant; Woodbridge, N. Y., Plant.

**American Excelsior Corp.**, Marinette, Wis.

**American Marietta Co.**, Dragon Cement Co. Div., Northampton, Pa.

**American Radiator & Standard Sanitary Corp.**, Plumbing & Heating Div., Louisville, Ky.

**American Rock Wool Corp.**, Torrance, Calif.

**American Smelting & Refining Co.**, three awards: Detroit, Mich., Plant; Federated Metals Div., Chicago, Ill.; Globe Plant, Denver, Colo.

**American Tobacco Co.**, two awards: Research Laboratory, N. Y.; Scranton, Pa., Branch.

**Amp, Inc.**, four awards: Brodbeck, Pa., Plant; Glen Rock, Pa., Engineering Plant; Seven Valleys, Pa., Plant; Shrewsbury, Pa., Plant.

**Archer Daniels Midland Co.**, two awards: Los Angeles, Calif., Plant; Minneapolis, Minn., Plant.

**Ash Grove Lime & Portland Cement Co.**, Galloway, Mo., Plant.

**Ashland Oil & Refining Co.**, two awards: Canton, Ohio, Refinery; Frontier Refinery, Buffalo, N. Y.

**The Atlantic Refining Co.**, Block 31, Neale & Denton Gasoline Plants.

**Atlas Powder Co.**, two awards: Dargo Experimental Lab., Marshall, Tex.; White Haven, Pa., Works.

**Aurora Gasoline Co.**, Trucking Div., Elsie, Mich.

**J. E. Baker Co.**, three awards: Billmeyer Plant, Bainbridge, Pa.; Inwood, W. Va., Plant; York, Pa., Plant.

**Ballymena Woolen Mills.** Oella Baltimore County, Md., Plant.

**Bethlehem Steel Co.**, two awards: Clearing Reinforcing Bar Fabricating Shop & Wire Rope Mill; Fabricated Steel Construction, Bethlehem Weldment Shop, both of Bethlehem, Pa.

**Better Packages, Inc.**, Shelton, Conn.

**Bordens Ice Cream Co.**, Philadelphia, Pa.

**Bowman Dairy Co.**, two awards: Ice Cream Sales Del., Chicago; Inspection, Chicago.

**British American Oil Co., Ltd.**, Edmonton, Alberta, Can., Refinery.

**British Columbia Cement Co., Ltd.**, Bamberston, Victoria, B. C.

**Broderick & Bascom Rope Co.**, Peoria, Ill., Plant.

**Buckeye Cellulose Corp.**, Little Rock, Ark., Mill.

**Burroughs Corp.**, Windsor Plant, Detroit, Mich.

**Cabot Carbon Co.**, five awards: Dixon Plant, Big Spring, Tex.; Estes Plant, Wickett, Tex.; Kermit, Tex., Plant; Pampa Office, Tex., Plant; Schaefer Plant, Pampa, Tex.

**Canadian Arsenals, Ltd.**, Gun Ammunition Div., Lindsay, Ont., Can.

**Canadian Gypsum Co., Ltd.**, Guelph, Ont., Can.

**Canadian Industries, Ltd.**, eight awards: Brainerd Works, Winnipeg, Manitoba; Calgary, Alberta, Can., Works; Canadian Safety Fuse Co., Ltd., Brownsburg, Quebec; Copper Cliff, Ontario, Works; Halifax, N. S., Works; Hamilton, Ontario, Fertilizer Works; Montreal Paint & Varnish Works; Paint Research Lab., Toronto, Ont.

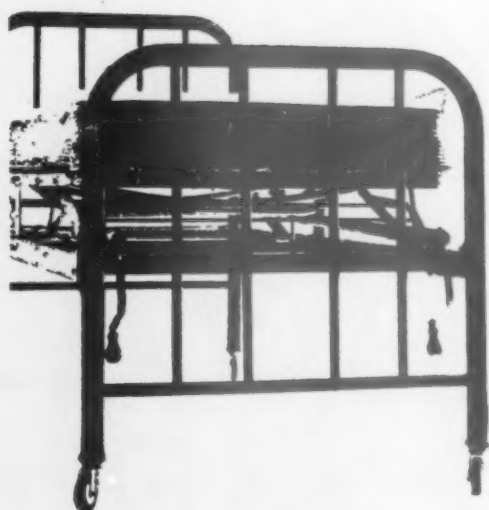
**Celanese Corp. of America**, Lanese Plant, Burlington, N. C.

**Central Kansas Electric Cooperation, Inc.**, Great Bend, Kan.

**Certain Teed Product Corp.**, three awards: Dallas Tex., Plant, Richmond, Calif., Plant, York, Pa., Plant.

**Chain Belt Co.**, Plant 3, Milwaukee, Wis.

**Chicago South Shore & South Bend Railroad**, Way & Structures Dept., Michigan City, Ind.



One accident  
that doesn't happen  
can pay for

## ALCOA ABRASIVE TREAD PLATE

An employee slips on stairs, severely fractures his right heel. Disability is permanent. Medical expenses top \$500. Employee compensation comes to \$2,956.43. Production time is lost while a new employee is trained for the job. The employer's accident rate is up.

Such expensive and unnecessary slipping accidents kill or maim 20,000 workers in industry every year. To prevent such accidents, Alcoa® Aluminum Abrasive Tread Plate remains slip-proof even when wet, oily or greasy. Made of tough particles of fused aluminum oxide, its hard, abrasive surface is the only nonskid floor plate that gives you the advantages of lightweight, corrosion-resistant aluminum.

For more information on how you can eliminate hazardous conditions from floors, stairs, ramps and other areas, check the coupon below; write Aluminum Company of America, 1671-G Alcoa Building, or call your nearest Alcoa distributor.

MAKE YOUR OWN 30-second Safety Test . . . Check the Coupon for FREE Sample of Alcoa Aluminum Abrasive Tread Plate.



Your Guide  
to the Best in  
Aluminum Value



No slips . . . no falls . . . no injuries with the safe, sure grip you get from Alcoa Abrasive Tread Plate.



"ALCOA THEATRE"  
Exciting Adventure  
Alternate Monday Evenings

### ALUMINUM COMPANY OF AMERICA

1671-G Alcoa Building, Pittsburgh 19, Pa.

I'd like to see how Alcoa Abrasive Tread Plate prevents slipping. Please send me FREE sample—also application, design and fabricating data.

Name and Title \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City and State \_\_\_\_\_

Circle Item No. 27—Reader Service Card

—To page 60



# BUILT-IN SENTRY GUARDS YOUR HEAD



## Power-Bloc suspensions by E. D. Bullard Company

No matter how adjusted, a Bullard **Power-Bloc** suspension always automatically guarantees a safe limit of clearance between the top of your head and the inside of your hat's shell. This lets your safety hat or cap work with shock absorber-like action, blocking power of overhead blows from crushing or lacerating your skull. Your hat is lighter, cooler, and more comfortable with a **Power-Bloc** suspension. Sweatband is made from a remarkable new foam plastic that actually shapes itself to your head as worn. Its highly absorbent characteristic keeps

perspiration out of your eyes . . . yet the sweatband can be easily washed new in soap and warm water.

Modernize your "HARD BOILED" hats and caps in seconds

Replace all your old Bullard hat suspensions for the extra comfort and safety of **Power-Bloc** . . . the suspension that makes all others obsolete.



Write or call your distributor  
for complete specifications



CM—mark of quality chain.

it's **BRANDED** for lifetime identification  
it's **SAFER** because you can be  
sure of its grade (strength)

**NO MORE GUESSING** about chain. Now you can be absolutely sure, the day you get it or months later, that you are using the right chain for the job. CM chain, always tops for quality, now brings you this added feature at no extra cost... a chain that is **clearly** and **permanently** branded by Make and Grade for lifetime identification.



3B—grade of coil chain made from low carbon steel.

**HOW IT'S DONE**—The mark is embossed onto, not stamped into, the link. The Make and Grade appear alternately at approximately 10" intervals along the chain opposite the weld and on one side of the link only.



**PROOF COIL**

similar to BBB but with links somewhat longer.



**HIGH TEST**

heat treated carbon steel chain for load binding and general use where extra strength and wear resistance are important.



**HERC-ALLOY**

the original alloy steel sling chain. This grade should always be used for SLING or LIFTING APPLICATIONS.

This permanent branding is presently available on the grades illustrated in all sizes under 1/2". CM chain is also color marked at exact 5 foot intervals for quick identification and fast, accurate measuring.

Specify **CM Inswell** for the best of everything in chain

**COLUMBUS McKINNON CHAIN CORPORATION**  
TONAWANDA, NEW YORK

NEW YORK • CHICAGO • CLEVELAND • SAN FRANCISCO • LOS ANGELES

In Canada: McKinnon Columbus Chain Limited, St. Catharines, Ontario

CM INSWELL HERC-ALLOY PAT. APP. FOR BRANDED CHAIN



**Chrysler Corp.**, Supply Div. Parts Plants, two awards: Atlanta, Ga.; Kansas City, Kan.  
**Const Electric Power Assn.**, Bay St. Louis, Miss.  
**Comfy Mfg. Co.**, Baltimore, Md.  
**Congoleum Nairn, Inc.**, Cedarhurst, Md.  
**Consolidated Cement Corp.**, Cement City, Mich.  
**Consumers Cooperation Assn.**, three awards: Printing Dept., Kansas City; Refining Plant, Phillipsburg, Kan.; Warehouse, Phillipsburg, Kan.  
**Container Corp. of America**, four awards: Chattanooga, Tenn., Plant; Flexible Packaging Div., Chicago; Muskogee, Okla., Plant; Sefton Fibre Can Co., Piqua, Ohio.  
**Davison Chemical Co.**, Div. of W. R. Grace & Co., three awards: Lansing, Mich., Plant; Tulsa, Okla., Plant; Wilmington, N. C., Plant.  
**Deere & Co.**, Vermillion Malleable Iron Works, Hoopeston, Ill.  
**Del Mar Engineering Laboratories**, Los Angeles, Calif.  
**Denver & Rio Grande Western Railroad Co.**, four awards: Dining Car & Hotel Dept.; Signal & Communications Dept.; Special Service Dept.; Stores Dept.; all of Denver, Colo.  
**Dewey Portland Cement Co.**, Dewey, Okla.  
**Diamond Alkali Co.**, Chlorinated Products Div., Houston, Tex.  
**Diamond Crystal Salt Co.**, Akron, Ohio.  
**Dierks Forests, Inc.**, Loggers Mountain, Pine, Ark.  
**Dockson Corp.**, Detroit, Mich.  
**Dominion Tar & Chemical Co., Ltd.**, three awards: Brantford Roofing Co., Ltd., St. John, N. B.; Can Creosoting Co., Newcastle, N. B.; Montreal, Quebec, Plant.  
**Dravo Corp.**, two awards: Dravo Building, Pittsburgh, Pa.; Fullerton Portsmouth Bridge Co., Pittsburgh, Pa.  
**E. I. duPont de Nemours & Co., Inc.**, 24 awards: Akron, Ohio, Laboratory; Antioch, Calif., Works; Beaumont, Tex., Works; Circleville, Ohio, Construction; Circleville, Ohio, Plant; Clinton Construction; Du Pont Country Club, Wilmington, Del.; Du Pont, Wash., Works; Ecorse, Mich., Works; Elastomer Res. Laboratory, Deepwater Point, N. J.; Film Dev. & Tech. Serv. Lab., Wilmington, Del.; Hall of Records, Wilmington, Del.; Haskell Lab., Del.; Louviers, Colo., Works; Memphis, Tenn., Plant; Newport, Del., Construction; Niagara Falls, N. Y., Construction; Petroleum Lab., Deepwater Point, N. J.; Pigments Research Lab., Henry Clay, Del.; Plant Research Laboratory, Del.; Polych Sales Service Lab., Wilmington, Del.; Spruance Construction, Richmond, Va.; Toledo, Ohio, Electrochemical Plant; Wurtland, Ky., Works.  
**Electric Regulator Corp.**, Norwalk, Conn.  
**Federal Chemical Co.**, Louisville, Ky.  
**Ferro Corp.**, three awards: Ceramic Supply Co., Crooksville, Ohio; Louthan Mfg. Co., Salem, Ind.; Nashville, Tenn., Plant Frit Div.

**Fieldcrest Mills, Inc.**, three awards: Central Warehouse; Electric Blanket Mill; Gen. Office & Specials, all at Spray, N. C.

**Firestone Tire & Rubber Co.**, six awards: Defense Products, Magnolia, Ark.; Lab Research & Pilot Plant, Akron, Ohio; New Castle, Ind., Plant; Industrial Products Plant, Los Angeles, Calif.; Retread Shop, Akron, Ohio; Reclaim Rubber Plant, Los Angeles, Calif.

**Flexible Steel Lacing Co.**, Chicago, Ill. **Flintkote Co.**, two awards: Little Ferry, N. J., Plant; Lockport, N. J., Plant.

**Food Machinery & Chemical Corp.**, four awards: Niagara Chemicals Div., Burlington, Ontario; Niagara Chemical Div., Richmond, Calif.; San Francisco, Calif., Plant; Westvaco Chemical Div., Newark, Calif.

**Ford Motor Co.**, 13 awards: Parts Depots: Atlanta, East Pointe, Ga.; Boston, Mass.; Charlotte, N. C.; Cleveland, Ohio; Jacksonville, Fla.; Kansas City, Mo.; Oklahoma City, Okla.; Pittsburgh, Pa.; Seattle, Wash. Sales & Parts Depot, Minneapolis, Minn.; Division Staff Services, Dearborn, Mich.; Special Prods. Gp. Accounting, Rawsonville, Mich.; Walnut Parts Depot, Des Moines, Iowa.

**France Stone Co.**, two awards: Bellevue, Ohio, Plant; Plant 2, Greencastle, Ind.

**Gates Rubber Co.**, Canadian Plant K. **General Cigar Co.**, three awards: Allentown, Pa., Plant; Chester Branch, Lancaster, Pa.; Valley Branch, Kingston, Pa.

**General Electric Co.**, 16 awards: Aircraft Service Shop, Cincinnati, Ohio; Apparatus Service Shop, Cleveland, Ohio; Apparatus Service Shop, Philadelphia, Pa.; Apparatus Service Shop, York, Pa.; Bucyrus, Ohio, Glass Works; Carolina Welds, Goldsboro, N. C.; Conneaut, Ohio, Base Works; Cuyahoga Lamp Works, Cleveland, Ohio; Dover, Ohio, Wire Works; Lamp Development Lab., Cleveland, Ohio; Glass Mach. Works, Cleveland, Ohio; Lamp Leads & Bases Dept., Cleveland, Ohio; Nela Lamp Works, Cleveland, Ohio; Nela Press, Nela Park, Cleveland, Ohio; Oakland, Calif., Lamp Works; Service Shop, Salt Lake City, Utah.

**General Mills, Inc.**, seven awards: Bag Factory, Vallejo, Calif.; Flour Feed Mill, Amarillo, Tex.; Flour & Feed Mill, Spokane, Wash.; Flour & Feed Mill, Vallejo, Calif.; Purity Oats Mfg., Keokuk, Iowa; Purity Oats Mfg., Minneapolis, Minn.; Soybean Product Plant, Rossford, Ohio.

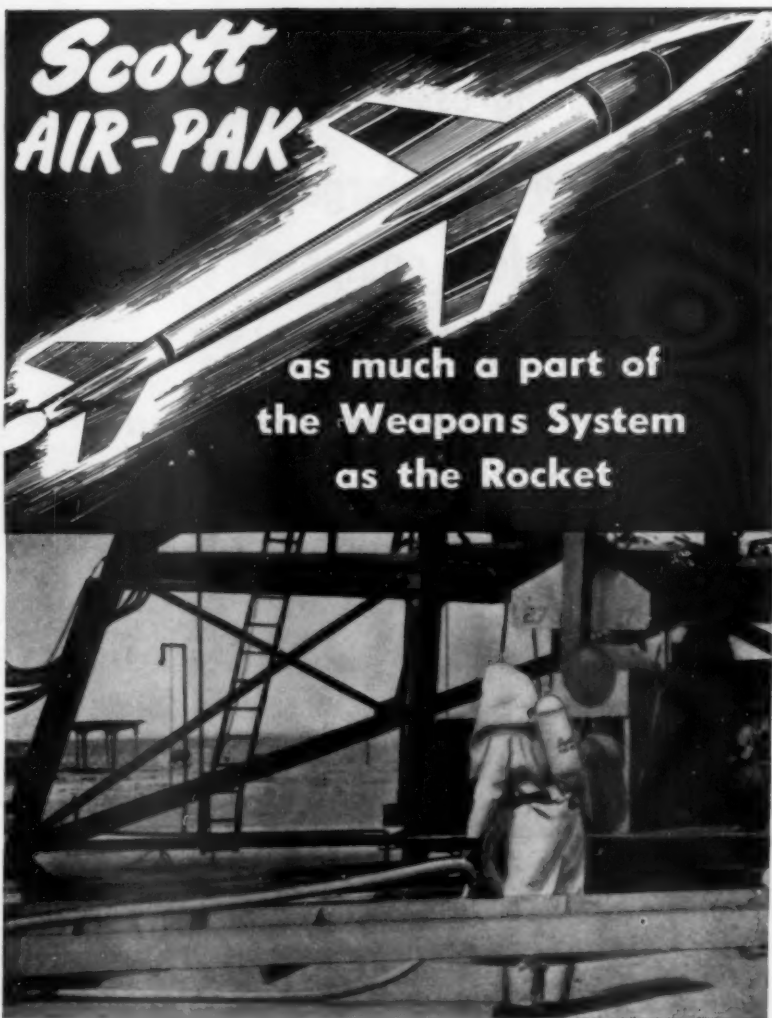
**General Portland Cement Co.**, Chattanooga, Tenn.

**General Shoe Corp.**, six awards: Frankfort, Ky.; Genfoam, Nashville, Tenn.; K. L. Shoe Co.; Leather Shoe Mfg., Cowan, Tenn.; Haan, Nashville, Tenn.; Shoe Mfg., Nashville, Tenn., Warehouse.

**General Time Corp.**, Seth Thomas Div., Thomaston, Conn.

**B. F. Goodrich Chemical Co.**, two awards: Geon Plant, Niagara Falls, N. Y.; Riverside Plant, Riverside, N. J.

—To page 90



Fireman makes ready for an acid fueling standby at Holloman Air Force Base, N. M. Note clothing which is acidproof. William B. Oney, Base fire chief, says, "We must have a breathing apparatus which is dependable, and Scott Air-Pak sure fills the bill."

The American City Magazine

To successfully launch one rocket, hundreds of minute details must be carefully coordinated. Each part must operate dependably to insure unfailing operation of the whole!

And so it is with the Scott Air-Pak. In any one of its several configurations, it gives that sure, positive breathing protection to men that perform the hazardous duties associated with nuclear weapons, guided missiles or man-made satellites. Whether it's fueling a rocket or standing by to fight a fire, you can depend on the Scott Air-Pak to give service beyond the call of duty.



Circle Item No. 30—Reader Service Card

*The Congress Exposition...*

## **The World's largest display of safety equipment ideas, products**

*...to aid your safety effort*



186 manufacturers of safety products will exhibit at the National Safety Congress—a vast and interesting array of safety devices, equipment, aids and ideas to help you solve accident prevention problems! Plan to take the time to visit this outstanding, three floor exhibit that includes practically every major manufacturer of a safety product. You'll find it well worth while.

CONRAD HILTON HOTEL  
Chicago, October 20-24.

North & South Exhibition Halls  
Second & Third Floors

Open daily, 8:30 A.M. to 5:30 P.M.  
Closing Thursday  
October 23, 5:30 P.M.

Program Meetings Continue  
Through Friday Morning  
October 24

**NATIONAL SAFETY COUNCIL, Chicago, Ill.**

### **Meet Them at The Exposition**

Since 1916, the Exposition has been an essential part of the National Safety Congress. Safety's big show has grown in size and scope with industry's expansion. This growth has brought more complex safety and health problems and more exacting standards of protection.

Introducing • • • • •

38 years  
**Mine Safety Appliances Co.**

37 years  
**Stonehouse Signs, Inc.**  
**Surty Mfg. Co., Inc.**

33 years  
**American Optical Co.**  
**Elliott Service Co., Inc.**

32 years  
**The Patent Scaffolding Co., Inc.**

31 years  
**Davis Emergency Equipment Co., Inc.**  
**Lehigh Safety Shoe Co.**  
**Standard Safety Equipment Co.**

30 years  
**Metropolitan Life Insurance Co.**  
**Pulmosan Safety Equipment Co.**  
**Safety First Shoe Co.**  
**W. H. Salisbury & Co.**

29 years  
**Alfred M. Best Co., Inc.**  
**Chicago Eye Shield Co.**  
**Gro-Cord Rubber Co.**  
**Willson Products Division,**  
**Ray-O-Vac Co.**

28 years  
**The Protectoseal Co.**

27 years  
**R. H. Buhrke Co.**

26 years  
**E. D. Bullard Co.,**  
**Hy-Test Safety Shoe Div.**  
**International Shoe Co.**  
**Walter Kidde & Co., Inc.**

25 years  
**American LaFrance Corp.**  
**Iron Age Div.,**  
**H. Childs & Co., Inc.**

24 years  
**Industrial Gloves Co.**  
**Safety Clothing & Equipment Co.**

22 years  
**Columbus McKinnon Chain Corp.**  
**Dockson Corp.**  
**Junkin Safety Appliance Co., Inc.**  
**Justrite Mfg. Co.**  
**Keystone View Co.**  
**Milburn Co.**



You—the men and women who are working to keep the hazards of occupation under control—have helped to make the Exposition colorful, attractive and helpful.

The manufacturers have profited by your willingness to try out new ideas and products and by your constructive criticisms. Experience on the job has supplemented their research in the development and improvement of safety products.

Whether your primary interest is in accident prevention, fire protection, first aid or occupational hygiene you'll find something right along your line among the exhibits.

In the list below, you'll find many old friends. And when the exhibit opens, you'll find some who are new in the field. Don't overlook them.

They're all looking forward to meeting you.

## the Exhibitors at the 46th National Safety Congress and Exposition . . . old faces and new

21 years

Kimball Safety Products Co.  
B. F. McDonald Co.  
Martindale Electric Co.  
G. H. Packwood Mfg. Co.  
Rose Mfg. Co., Inc.  
Wheeler Protective Apparel, Inc.

20 years

Thom McAn Safety Shoe Div.  
A. Schrader's Son Div.,  
Seovill Mfg. Co., Inc.

19 years

Aetna Casualty & Surety Co.  
Ampeco Metal, Inc.  
Ansul Chemical Co.  
Bausch & Lomb Optical Co.  
Stewart R. Browne Mfg. Co., Inc.  
Karel First Aid Supply Co.  
Walter G. Legge Co., Inc.  
Lightfoot Co.

18 years

Bradley Washfountain Co.  
Hild Floor Machine Co.  
Sellstrom Mfg. Co.

17 years

Acme Protection Equipment Co.  
Insto-Gas Corp.  
Medical Supply Co.  
Onox, Inc.

16 years

M. E. Cunningham Co.  
J. H. Emerson Co.  
The Surety Rubber Co.

15 years

American Chain & Cable Co., Inc.  
General Fire Extinguisher Corp.  
Williams Jewelry & Mfg. Co.

14 years

John H. Breck, Inc.  
Mathias Klein & Sons  
Pyrene C-O-Two Div.,  
The Fyr-Fyter Co.  
United States Safety Service Co.  
Watchemoket Optical Co.

13 years

A. B. Chance Co.  
Duo-Safety Ladder Corp.  
Marsh & McLennan, Inc.  
Occupational Hazards  
Scott Aviation Corp.  
S. G. Taylor Chain Co.

12 years

E. I. duPont de Nemours & Co., Inc.  
Julian A. McDermott Corp.

Miller Equipment Co., Inc.  
The Positive Safety Mfg. Co.  
Randolph Laboratories, Inc.  
Stephenson Corp.

11 years

Arcadia Mfg. Co.  
W. M. Bashlin Co.  
Masury-Young Co.  
Racine Glove Mfg. Co., Inc.  
Rockwood Sprinkler Co.  
Welsh Mfg. Co.

10 years

American Allsafe Co.  
Edmont Mfg. Co.  
Jomac, Inc.  
Porto-Clinic Instruments, Inc.

9 years

Advance Glove Mfg. Co.  
Alan Wood Steel Co.  
W. H. Brady Co.  
Dow Corning Corp.  
Fendall Co.  
The Pac-Kit Co.  
Union Wire Rope Corp.

8 years

Chemical Corp.  
Detex Watchlock Corp.  
Fyr-Fyter Div. of  
The Fyr-Fyter Co.  
Institute of Industrial Launderers  
Micro-Switch, a Div. of Minneapolis-  
Honeywell Regulator Co.  
Osborn Mfg. Corp.

7 years

Frommelt Industries  
The Globe Co., Grip-Strut Div.  
Hygiene Research, Inc.  
Interstate Rubber Products Corp.  
Jackson Products, Air Reduction  
Sales Co., a Div. of Air  
Reduction Co., Inc.  
Jones & Co.  
Kelley Paint Co.  
J. Kunz Glove Co.  
Lowery Brothers Co., Inc.  
Maico Electronics, Inc.  
Safety First Products Corp.  
Safety Tower Ladder Co.  
Stop-Fire, Inc.  
Wagner Sign Service, Inc.  
Wolverine Shoe & Tanning Corp.

6 years

American Mat Corp.  
Burlin & Co., Inc.  
Haws Drinking Faucet Co.  
Newco Mfg. Co., Inc.  
Prairie State Products Co.  
Safety Box Toe Co.

5 years

Award Incentives, Inc.  
Beryllium Corp.  
Bethlehem Steel Co.  
Bone Dry Shoe Mfg. Co.  
Buffalo Fire Appliance Corp.  
Fine Organics, Inc.  
Peterson Engineering Co.  
The Pioneer Rubber Co.  
Radiator Specialty Co.  
Sawyer-Tower, Inc.

4 years

Akron Brass Mfg. Co., Inc.  
American Bilrite Rubber Co.  
Belton Hearing Aid Co.  
Lester L. Brossard Co.  
Daisy Mfg. Co.  
Fibre-Metal Products Co.  
Ford Motor Co.  
Knapp Bros. Shoe Mfg. Corp.  
National Medical Supply Co.  
Ted Prutsman Defrosto Mirrors, Inc.  
Sarole, Inc.  
Swivelier Co., Inc.  
Teet, Inc.  
Westline Products Div. of  
Western Lithograph Co.  
The Wilson Rubber Co., a Div. of  
Becton, Dickinson & Co.

3 years

Ballymore Co.  
DeWalt, Div. of American Machine  
& Foundry Co.  
Glendale Optical Co.  
Jones & Laughlin Steel Corp.  
Notifier Corp.  
Putnam Rolling Ladder Co., Inc.  
Safeguard Mfg. Co.  
Scarjeant Metal Products, Inc.  
Speakman Company

2 years

American Industrial Safety  
Equipment Co., Inc.  
Antrex Corp.  
The J. R. Clark Co.  
Eagle Mfg. Co.  
Elkhart Brass Mfg. Co., Inc.  
Grinnell Co., Inc.  
Leeder Mfg. Co., Inc.  
Progress Industries, Inc.  
Riegel Textile Corp.  
Titmus Optical Co., Inc.  
U. S. Rubber Co.

1 year

American Brattice Cloth Corp.  
American Optometric Assoc.  
Becker Surgical Supply  
Blackhawk Mfg. Co.  
Campbell Chain Co.  
Doho Chemical Corp., Mallon Div.  
Federal Sign & Signal Corp.  
Fvrepel Products, Inc.  
Hamilton Watch Co.  
Hopfield Industrial Mfg. Co.  
Industrial Acoustics Co.  
McKay Co.  
Oxygen Equipment & Service Co.  
Oxy-Gear, Inc.  
Perfect Circle Corp.  
Portable Light Co., Inc.  
Saf-T-Boom, Inc.  
C. D. Scarlett Co., Inc.  
Stanton Scientific Equipment

### Educational Exhibitors

American Red Cross  
Boy Scouts of America  
Inter-American Safety Council, Inc.  
Junior Achievement of Chicago  
National Society for Prevention of  
Blindness  
U. S. Atomic Energy Commission

# PERSONALS

News of people in safety and related activities

## Hagerup and Moore Advanced by Lumbermens

LEONARD W. HAGERUP has been elected a third vice-president and ROBERT L. MOORE an assistant sec-

retary of Lumbermens Mutual Casualty Company and American Motorists Insurance Company, Chicago.

Mr. Hagerup, recently named manager of the Safety Engineering Department, is marking his 26th year with the Kemper organization. He was elected assistant secretary of Lumbermens and American Motorists in 1952.

He serves as a member of the National Committee on Films for Safety, the National Committee of



Leonard W. Hagerup

Fleet Motor Supervisors, the National Committee on Uniform Traffic Laws and Ordinances and the standards board of the American Standards association.

He is a former member of the National Association of Automotive Mutual Insurance Companies' automotive safety committee and a former member of the executive committee of the Wood Products Section, National Safety Council.

Mr. Moore joined the Kemper organization in 1951 and was director of the technical and engineering division of the Safety Engineering Department before being named superintendent of engineers recently.

He is a member of the American Society of Civil Engineers and



Robert L. Moore

# K-LENS-M

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## *For Safe Clear Vision*



**Cleans and Anti-Fogs All Types of Personal and Protective Eye Wear**

For  
Glass  
or  
Plastic

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## Tops in COMFORT

To men who wear safety hats all day long, comfort is important. And to be comfortable, a hat must fit well and bear smoothly and evenly on the head. Like Jackson's.

Jackson safety hats and caps give you unequalled ease of size adjustment. See for yourself how little it takes to fit the headband to your clearly marked hat size and how firmly it is kept that way. Smooth and flexible, the polyethylene headband (unaffected by temperature, moisture and acids) is firm enough to hold its shape and has a soft-backed leatherette sweatband all around.

Being easy to adjust, men will fit these hats accurately and find they stay on better, even while working in unusual positions and windy weather. And, of course, Jackson chin straps and 'Winterizers' are easily attached in case of really cold and rough conditions.

## Tops in STYLE

For men to wear safety hats eagerly and even proudly, appearance is essential. Jackson's protect a man without looking bulky, they have a clean, uncluttered look. They present a shiny, smooth finish, and it is easy to keep them spick-and-span.

## Tops in SAFETY

Thorough comparative testing against published, industry-accepted standards proved that Jackson's three types of safety hats and caps, each in its own class, offer an extra margin of safety which should make Jackson your choice. They're tops!

Sold World-Wide through Distributors and Dealers of Welding Supplies and Safety Equipment

### Jackson Products

AIR REDUCTION SAFETY CO. A DIVISION OF AIR REDUCTION CO. INC.

WARREN • MICHIGAN



The 'Top Hat' for Safety . . . the JACKSON 'LIFE GUARD' offers unequalled extra protection to workers in many trades by surpassing both the Edison Institute requirements for line workers' and the Federal Specifications for construction workers' hats. A hat and a cap in white, yellow and grey.



JACKSON FIBER GLASS hats and caps surpass all Federal tests for construction workers' safety hats. In white, grey and six other standard colors. These caps, as well as the Life Guard caps, are also available in combinations with Jackson welding helmets, goggles and a variety of face shields.



The JACKSON 'ALUMIHAT' complies with all Federal requirements (including impact and penetration resistance) except electrical insulation. The heat-treated aluminum shell is anodized to a soft satin finish to reflect heat without undue glare. The full brim is strengthened by a strong, rolled edge.

# WHATEVER the JOB...



## There's a Glove that fits it best

Tars, oils, greases and chemicals . . . each makes a different demand on a work glove. That's why HOOD makes 29 different kinds — in rubber, neoprene and plastic. In this wide variety of styles and materials, there's one glove that's best for each job in your plant.

Hood's famous Glove Guide, with its "wear test" performance chart, helps you choose the right glove for every application. For your free copy, write to: Hood Industrial Gloves, Watertown 72, Mass.



### Hood Industrial Gloves

RUBBER • NEOPRENE • PLASTIC INDUSTRIAL GLOVES

last year was elected secretary of the executive committee for the National Safety Council's Construction Section. He had been a senior engineer with NSC for six years before coming to the Kemper organization. He is also chairman of the subcommittee on construction for the National Association of Mutual Casualty Companies.

### Davis Again Heads Equipment Association

The Industrial Safety Equipment Association, Inc., held its Annual Meeting June 24-27 at Oyster Harbors, Osterville, Mass., and re-elected as president F. R. Davis, Jr., of Davis Emergency Equipment Co., Inc., Newark, N.J.

Elected also at the meeting were J. F. Phillips, The Boyer-Campbell Co., Detroit, Mich. vice-president; E. W. Bullard, Jr., E. D. Bullard Company, Sausalito, Calif., and A. G. Mowson, Bausch and Lomb Optical Company, Rochester, N.Y., trustees.

R. J. Miller, Miller Equipment Co., Inc., Franklin, Pa., and William C. Weeks, Willson Products Division, Ray-O-Vac Company, Reading, Pa., carry over as members of the Board, while J. B. Davies, Mine Safety Appliances Company, Pittsburgh, Pa., junior past president, continues as a member of the Board for another year. In addition, Mr. Davies is serving on the Board of Directors of the National Safety Council. In this capacity he acts as liaison between the ISEA and the Council.

The ISEA is a group of manu-



F. R. DAVIS, JR.





J. F. PHILLIPS

facturers whose purpose is to exchange ideas which ultimately benefit users of safety equipment, plus solving problems of common interest of the industry. The Association is divided into product groups representing all types of industrial safety equipment. Specific problems may be directed to the ISEA, 420 Lexington Avenue, New York 17.

#### Duke Chairman of NFPA

T. SEDDON DUKE of Philadelphia, Pa., has been named chairman of the board of directors of the National Fire Protection Association.

A past president of the non-profit technical and educational organization which prepares and publishes the National Fire Codes, he succeeds the late Richard E. Vernor of Chicago.

During more than 30 years of active participation in NFPA affairs, Mr. Duke has served as chairman of a number of important committees and currently serves on the NFPA Technical Advisory Committee.

He is president and a board member of the Star Sprinkler Corp. of Philadelphia, manufacturer of automatic sprinkler equipment, and since 1943 has acted as chairman of the automatic sprinkler industry's special committee for government liaison.

Joseph A. Palinsky, formerly safety director at the U. S. Army Quartermaster Depots at Nabbolenbach and Giessen, Germany,

destroy  
weeds  
to get  
safety



...and for year-'round safety,

use new **UREABOR**® weed killer

You can easily keep your grounds free of weeds! To destroy vegetation, and prevent regrowth for a full season, you need only apply new UREABOR. It's a convenient, concentrated, ready-to-use chemical in dust-free granular form for DRY application at rates of 1 to 2 lbs. per 100 sq. ft. Small areas may be treated by hand. For large areas, special spreaders are available in hand-operated and power-driven models. To learn more about this safe, nonvolatile, nonflammable and noncorrosive weed killer for industry—write!

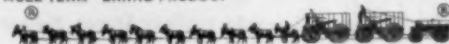
AGRICULTURAL SALES DEPARTMENT

**United States Borax & Chemical Corporation**

PACIFIC COAST BORAX COMPANY DIVISION

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has recently been reassigned as safety director of the Military Subsistence Supply Agency and Army Administration Center in Chicago.

Palinsky, an associate member-at-large of the ASSE, helped to organize and is a charter member of the European-American Safety Engineers Society.

**JAMES A. HICKEY** of Atlanta, Ga., has been named safety coordinator for Southern Union Gas Company, Dallas, Tex.

Mr. Hickey comes to Southern Union with several years experience in accident prevention, having served since 1953 as safety supervisor for the Atlanta Gas Light Company. He is a graduate of the University of Indiana, where he majored in management, with special courses in safety engineering. He attended special safety classes for the U. S. Air Force at New York University in 1951 prior to serving as ground safety director at Lawson Air Force Base in Georgia.

Mr. Hickey has served as secretary-treasurer of the Georgia chapter of the American Society of Safety Engineers and as chairman of the Public Utilities Section of the 1958 Southern Safety Conference.

## R. G. Adair, Armco Safety Pioneer, Retires

After a distinguished 42-year career in employee relations work with Armco Steel Corporation, assistant vice-president R. G. Adair retired July 1.

Mr. Adair joined Armco in 1916 as a laborer at the Middletown, Ohio, Works. He quickly became a foreman, and in 1917 he helped to organize Armco's first safety department and was appointed assistant safety engineer.

When World War I came, he enlisted in the U. S. Army as a private and had advanced to first lieutenant at the time of his discharge. He returned to Armco and was appointed safety engineer at the Middletown Works.

In 1929, Mr. Adair became supervisor of safety and training for all plants with headquarters in the general offices of the company. During the time he personally directed Armco's activities in accident prevention, the company established a number of safety records which had previously been deemed impossible.

Mr. Adair also made many important contributions to the field of industrial training. He developed Armco's first "Foreman-Manager" training program.

In 1930, Mr. Adair was transferred to Armco's Butler, Pa., Works as assistant to the works manager. He returned to the general office as assistant director of personal relations in 1937, and two years later was made assistant manager of the company's Ashland, Ky. Works.

During World War II, Mr. Adair served in Washington as an industry member of the National War Labor Board. After the war he returned to Armco and became director of personal relations in 1949. He was elected an assistant vice-president of the company in 1957, and held that position until his retirement.

# PROTECTION with COMFORT! DAVIS ALUMINUM FULL BRIM HEDGARD



## FEATURING...

1. **LIGHTNESS** Ribbed aluminum alloy construction.
2. **STRENGTH** Exceeds 40 foot-pounds impact.
3. **COMFORT** Six-point snap-in suspension spreads impact and absorbs shock.
4. **ECONOMY** One hat fits most head sizes and shapes. (6 $\frac{1}{2}$ -7 $\frac{1}{4}$ ).
5. **STYLING** Broad back brim and satin finish make this hat especially attractive.
6. **COOLNESS** Air circulation between cradle and crown, and reflective qualities of metal keep hat wearer cool under hot sun.

Write for Bulletin T412N

## DAVIS PLASTIGLAS HEDGARDS

Complete line of light, strong, smart safety hats fabricated of polyester resin and fibreglas—many models available—full brim, cap or baseball type with lace-in or snap-in suspensions. Winter liners, cradles, chin straps and lamp brackets also available.



**DAVIS EMERGENCY EQUIPMENT CO., INC.**

55 Halleck Street, Newark 4, New Jersey

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**Tuffy.  
Tips  
On**

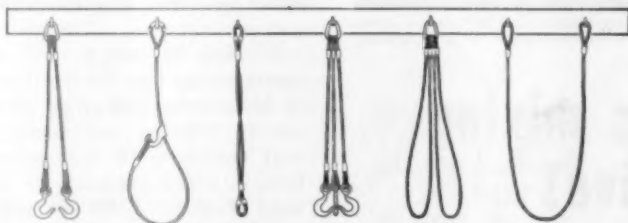
## SAFE USE OF SLINGS AND HOIST LINES

### Half of All Workmen's Compensation Cases in Ontario Caused by Materials Handling Accidents

Officials of the Workmen's Compensation Board at Toronto recently reported that 50% of compensation cases in 1956 (excluding accidents in which workmen were struck by something) were caused in materials handling work. Back injuries totaled 16.7% of compensated cases. Medical aid and compensation for back injuries added up to \$4,520,000.

That's a high price to pay, in human disability and suffering as well as in dollars, for avoidable accidents. It can be greatly reduced if safe methods of materials handling are more widely adopted and more diligently applied.

Here are some of the things you can do to reduce hazards of faulty equipment and operation:



#### Safety Begins with "Good Housekeeping"

Too often, slings are dumped in a corner of a storeroom after use. When they're needed again, it's difficult to untangle them and the wrong sling is chosen because it is easiest to get to. Shown here is a rack which makes orderly storage easy. Such tidiness makes for greater efficiency and safety all around.

1. **Keep slings, ropes, chains, and cables** in orderly storage when they're not being used. Such equipment can be damaged between lifts if it is left in haphazard piles.
2. **Don't allow** hitching equipment to remain loose on crane hooks, hoists and loads when not in use.
3. **Check hitching equipment** before using. Inspect it again before return to storage.
4. **Shake out kinks and twists to prevent kinked slings** before loading slings. Never use a kinked sling. Remember it is next to impossible to kink a Tuffy Sling in normal use; and when kinks do occur, they can be smoothed out with no serious damage.
5. **Make sure crane and hoist controls** are in best working condition. Test all equipment frequently.

#### FREE! Tuffy Sling Handbook



Gives complete data on Tuffy Slings — types, dimensions, weights and rate loads. Plus a complete riggers' manual and engineers' notebook on wire rope constructions and specifications. Write for your copy now.

#### You're On the Safe Side With **Tuffy** Slings

Maximum safety is one of the many benefits you get in Tuffy Slings. Here are some of the reasons why:

#### Pressed-On Streamlined Ferrules



Tuffy's pressed-on ferrule gives the tucked eye splice 100% of fabric strength. Applied under great pressure, the steel ferrule literally flows into spaces between wires and strands, developing friction force equal to full fabric strength. Streamlining eliminates snags and projections that might injure hands.

#### Tuffy's Exclusive Fabric



Only Tuffy gives you the exclusive, patented, machine-braided fabric that combines extra strength and flexibility never before built into any sling. It makes knotting and kinking next to impossible, and if kinks do occur they are easily smoothed out.

#### Your Tuffy Distributor Will Help You Save Money

He's stocked to give you fast delivery on Tuffy Slings, Hoist Line and other Union Wire Rope. The longer life and greater safety of Tuffy can reduce your operating costs. Get in touch with your Tuffy distributor now.

**union Wire Rope corporation**

SUBSIDIARY



STEEL CORPORATION

Specialists in high carbon wire, wire rope, braided wire fabric, stress relieved wire and strand  
**2224 Manchester Ave.**

**Kansas City 26, Missouri**



Gunpowder mixing unit consists of two screw agitators housed in a one-inch-thick tally bowl. Top portion of the bowl and agitator troughs are fabricated of Ampco Metal plate; bottom ends are sand-cast of Ampco Metal.

## Makes explosives mixing less explosive!



### Hazards minimized by mixer of spark-resistant AMPCO® METAL

As a safety engineer, you know the value of using Ampco Safety Tools for low-cost protection in areas where a hot spark might cause fire or explosion. But did you know that the same metal used in these tools is often fabricated into equipment to reduce the hazards of dangerous manufacturing operations?

Take the job of mixing gunpowder, for example. It's such a touchy process that mixing areas are confined to concrete cells or blast-houses. Because the ingredients in gunpowder mixes are so unstable, the greatest care must be exercised in using mixing tools.

That's why so many leading explosives manufacturers use mixers fabricated of Ampco Metal. It not only resists sparks—it also resists the corrosive and highly abrasive effects of gunpowder mixes. (Your production and maintenance people like that.) One powder-plant manager reports that his Ampco mixer has outlasted other types by two to one!

Does this suggest any application for Ampco Metal in your plant? Talk it over with your production men — and with an Ampco field engineer. Or write for details. *Ampco Metal, Inc., Dept. NS-9, Milwaukee 46, Wis. West Coast plant: Burbank, Calif. — Southwest plant: Garland (Dallas County), Texas.*

T-32

One of two screw agitators cast of Ampco Metal and then machined.



# AMPCO

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DR. CLARENCE BREMER, formerly director of research, has been appointed technical director of Oakite Products, Inc., New York, manufacturers of industrial cleaning and metal treating materials. Dr. Bremer will be responsible for the company's research and product development, and technical service laboratories.

## Obituaries

### R. A. DAHMS

R. A. DAHMS, district safety engineer for the Milwaukee Road at Minneapolis, Minn., died July 16 after a heart attack. He started work in the railroad's Track Department in September, 1918, and later transferred to engine service, working as a locomotive fireman for several years, after which he again returned to the Track Department.

In 1933 he was elected secretary-treasurer of the Brotherhood of Maintenance of Way Employees. In 1939 he was elected general chairman of that organization, in which capacity he served until August, 1942. He was appointed district safety engineer in November 1942 and was serving in that capacity at the time of his death.

### H. W. DAUBER

H. W. DAUBER, 53, manager of marketing services for the Mining and International Divisions of Mine Safety Appliances Company, died July 8 in Shadyside Hospital. He had been injured in an automobile accident on July 3.

Mr. Dauber, for several years assistant to the manager of the mining department of MSA, was named marketing manager in May 1957. He was responsible for advertising, publicity, sales promotion, and market research for the company's Mining and International Divisions.

He joined the company in 1943, and was a member of the Coal Mining Institute of America and the Illinois Mining Institute. He was a graduate of the University of Illinois.

National Safety News, September, 1958



## Tragic Facts

—From page 30

Motor-vehicle travel in 1957 was greater than in 1956, amounting to about 650,000,000 vehicle-miles. Death rate per 100,000,000 miles was 5.9—setting an all-time low. The previous low rate had been 6.3 achieved in 1954 and 1956. In 1947 the rate was 8.8, so in 10 years it dropped 33 per cent.

Motor-vehicle accident costs were estimated at \$5,300,000,000 in 1957. Of this \$1,850,000,000 was property damage.

In cities and towns with more than 2,500 population, 9,700 persons were killed in motor-vehicle accidents—1 per cent more than in 1956. In rural areas and towns of less than 2,500 population the death total was 28,800—a decrease of 4 per cent.

Until the end of the war, the mileage death rate was about 11.5 per 100,000,000 miles of travel. Had the mileage death rate been the same in 1957, the death total would have been approximately 75,000, or 36,500 more than the actual number.

### Home Accidents

Accidents on home premises in the United States were responsible for 28,000 deaths in 1957—the same as in 1956. Non-fatal injuries totaled 4,200,000. This means that about 2½ per cent of the entire population of the country suffered disabling injuries in home accidents. Of these, 110,000 were left with some permanent impairment. These accidents caused a monetary loss of about \$900,000,000.

There were decreases from 1956 to 1957 in deaths from falls and fire burns. Increases were recorded for deaths from poisons and suffocation.

Falls continue to be the leading cause of home deaths. Of these falls, well over four-fifths were of persons 65 or older. However, falls in the home are not exclusively a problem of old age. Older persons do not recover from their injuries as readily as younger persons, but various home-accident surveys have demonstrated falls

**STONEHOUSE  
SIGNS  
warn of  
DANGER!**



In your plant . . . now . . . do unmarked hazards threaten employees . . . equipment . . . production?

No potential danger is too small to be ignored. STONEHOUSE signs warn of EYE HAZARDS—MACHINE HAZARDS—FIRE DANGER—RADIATION HAZARDS—RESTRICTED AREAS—ELECTRICAL AND FALLING HAZARDS plus scores of others. Signs are made of enduring, tested materials, and designed to meet American Standard specifications.

An investment in accident prevention is sure to pay handsome rewards in man hours saved . . . equipment preserved . . . increased production. And remember, it costs so little!



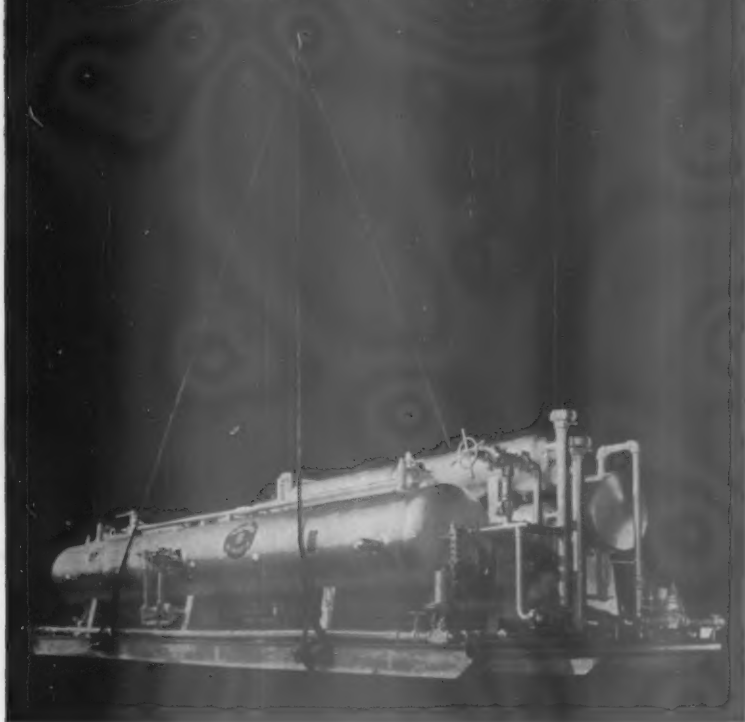
Write today for our free, full-color, 64 page catalog of thousands of ready-to-ship safety signs, plus information about custom-printed signs to meet your special needs.

"Signs since  
1863"

**Stonehouse  
SIGNS**

STONEHOUSE SIGNS, INC., Stonehouse Building, 9th and Larimer, Denver 4, Colorado  
Circle Item No. 38—Reader Service Card

# slings safety is a matter of dollars and sense



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Wickwire Slings have earned the confidence of safety-minded operators. For every Wickwire Sling is sub-

jected to rigid tests at every stage of production. A safety factor of 5 is used in the design of Wickwire Slings.

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*Certified Slings, proof-tested to loads equal to twice their rated capacity, are available at slightly higher cost.*



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PRODUCT OF WICKWIRE SPENCER STEEL DIVISION  
THE COLORADO FUEL AND IRON CORPORATION

THE COLORADO FUEL AND IRON CORPORATION—Albuquerque • Amarillo • Billings • Boise • Butte • Denver  
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Chattanooga • Chicago • Detroit • Emmonson (Pa.) • New Orleans • New York • Philadelphia

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are a leading cause of injury in all age groups.

### Public Non-Motor-Vehicle

Approximately 17,500 persons were killed in public non-motor-vehicle accidents during 1957. Of these 3,200 were killed in accidents involving railroad trains, boats, airplanes, bicycles and other road transport vehicles but not motor vehicles.

The most important causes of public non-transport deaths were falls and drowning, with a total of 4,500 deaths for each type, not including those associated with transport accidents or those in which the person was drowned while at work.

Next in importance were deaths from firearms, which totaled 1,000, followed by fire burns and injuries associated with blazes with 500 deaths.

### Railroad

During 1957 a total of 2,546 deaths occurred in railroad accidents, according to the Interstate Commerce Commission. This total includes passengers, employees, other nontrespassers and trespassers.

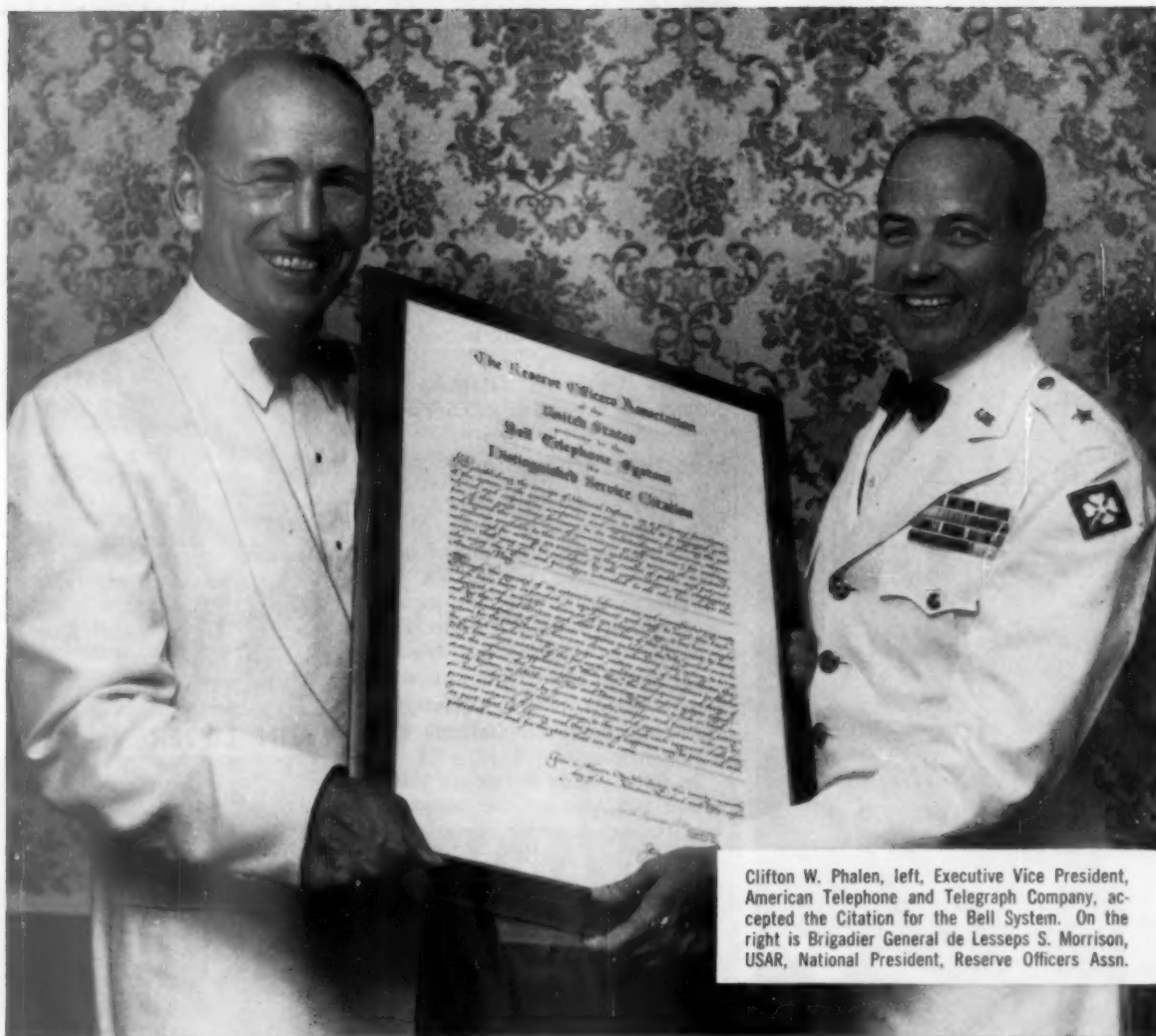
Deaths of passengers on trains decreased from 57 in 1956 to 17 in 1957. The passenger death rate in terms of passenger miles traveled was 0.07 per 100,000,000 passenger miles. Trespasser deaths numbered 766, a 1 per cent decrease from the previous year.

Deaths of employees on duty totaled 206. Comparison of employee deaths to previous years cannot be made due to changes in I.C.C. reporting rules. The frequency rate for all disabling injuries cannot be calculated since the information required for its computation is no longer being tabulated by I.C.C. In 1956 the rate was 15.30 disabling injuries per million man-hours worked.

Deaths from grade-crossing accidents numbered 1,468. Collisions between trains and motor vehicles accounted for 1,313 of these deaths.

### Aviation

The 1957 passenger death rate for the domestic passenger-carrying operations of scheduled air-



Clifton W. Phalen, left, Executive Vice President, American Telephone and Telegraph Company, accepted the Citation for the Bell System. On the right is Brigadier General de Lesseps S. Morrison, USAR, National President, Reserve Officers Assn.

## ROA Cites Bell System for Defense Work

On June 27th of this year the Reserve Officers Association of the United States awarded its Distinguished Service Citation to the Bell Telephone System. It was the first time that an industrial organization had ever received the award.

The Citation notes that the Bell System has established "the concept of national defense as a primary function of the nationwide communications service in which it is engaged," and that it makes its resources "available to civilian and military services at an instant's notice."

Among the defense projects which Bell System companies have worked on in recent years

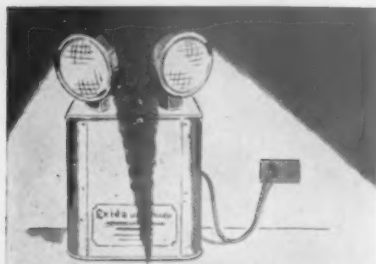
are the DEW line; the submarine cable system for the Caribbean missile testing range; "White Alice," an all-weather military communications system for Alaska; SAGE, the semi-automatic air warning system; the design and development of various atomic weapons; and work on guidance systems for the Thor, Titan and Nike missiles. In addition, Bell System personnel work closely with local Civil Defense agencies throughout the country.

The men and women of the Bell System are proud of this award, and proud, too, to be of service to the nation.

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18

Circle Item No. 40—Reader Service Card

lines was 0.12 per 100,000,000 passenger miles. This was the lowest rate on record, except for 1954 when the rate was 0.09. In contrast, the 1930 passenger death rate was 28.6.

Out of a total of 34 persons killed in domestic scheduled airline passenger-carrying operations, 31 were passengers and 3 were crew members.

Figures for private flying are incomplete, so the 1957 death total in civilian flying is not yet available.

There were no fatalities reported for irregular carriers.

## Selection, Placement

—From page 19

fore they commence work. Many plants do so at the time of hire, and some give instruction the first day on the job. Indoctrination usually takes the form of oral presentations with a combination of oral-written or oral-film methods next in preference. One plant supplements these with demonstrations.

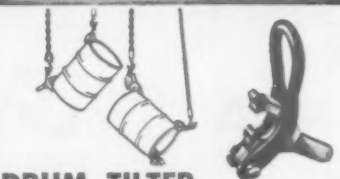
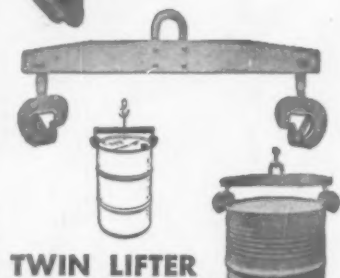
In some plants the safety orientation is given by the personnel department, in other firms by the foreman or supervisor, and in other organizations by the safety department.

Newly-indoctrinated employees are often checked periodically to detect flaws in absorption of instruction or in the instruction process. Failure to follow-up initial training has often resulted in accidents traced to the individual's faulty work methods or lack of taking sufficient safety precautions.

A large majority of firms provide instruction on the avoidance of hazards and on safe working practices and precautions. Still, there are a surprising number of instances where new workers receive little information about their job except in production procedures.

Adequate, well-organized safety instruction is essential. Several methods seem preferred. In one, a job instructor guides himself by a job instruction breakdown incorporating safety features and precautions with a step-by-step description of job procedure. Some instructors use, instead, a

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National Safety News, September, 1958



list of safety items to be emphasized.

These techniques insure uniform instruction in safety for any given job. Yet, less than half of the large plants and about one-fifth of the smaller operations use these procedures. Where these methods are in force, a supervisor usually makes his own job breakdown or safety list and checks it with the plant safety department before actual use.

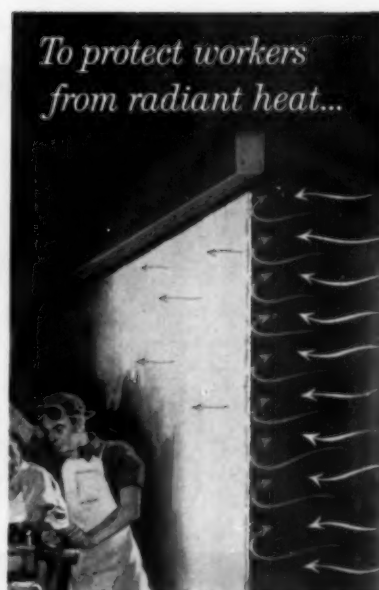
**Training job instructors.** In more than half of plants queried, all supervisors receive special training in an effective method of instructing new workers, chiefly on a continuing basis. Smaller operations often use outside, as well as in-plant personnel to conduct their classes for supervisors, while larger plants look mainly to their own training or personnel departments for job instruction training. The primary objective, naturally, is to have qualified instructors, regardless of their source.

High labor turnover has an im-

portant effect on plant safety. However, the average turnover in the A&MS section is 13 per cent, in comparison with the 12 per cent average turnover of about 1,000 plants among the 14 sections participating in the NSC Inventory. In a few plants the turnover runs up to 240 per cent annually and, in such cases, points up the importance of giving special attention to the safety needs of a changing work force.

**Supervision,** safetywise, sometimes is spread too thin. This situation can lead to laxity in practices regarding mechanical and physical conditions, training procedures, and correction of hazards. However, the A&MS section corresponds closely to the average of all 1,000 plants reporting in the Inventory.

The number of workers per supervisor in the majority of large plants in this section ranges from 15 to 30, and infrequently, to 40 and 50 employees. Most small plant supervisors have from



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Radiant heat is a major cause of discomfort and fatigue that reduces efficiency and causes accidents. Economical new J-M Aluminized Asbestos Cloth reflects 90% of all radiant heat . . . helps maintain high production and good safety practices.

This new J-M material is a rigidly tested combination of aluminum and Asbestos. It retains a great degree of strength at temperatures up to 1400°F—over long periods of time—and can be used for curtains, shields, blankets, hoods and covers to protect workers from flame as well as radiant heat.

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**PORTABLE SHIELDS** for emergency jobs near heat or flame can also be made with this J-M Aluminized Asbestos Cloth.



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Circle Item No. 42—Reader Service Card

National Safety News, September, 1958

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JARS...

Provides an invisible film barrier or coating over the skin to protect from irritation with solvents, such as hydrocarbons, carbon tetrachloride, kerosene and degreasing agents. It also supplies an effective barrier protection for the skin against dust-borne irritants, grime and grease... send for complete information concerning SKIN-COTE #1 & 3 and other related products that solve the problem of Industrial Dermatitis—

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FOR STEP LADDERS

**EAU CLAIRE, WISCONSIN**

13 to 23 workers in their charge; and several operations register 40 to 45 workers per supervisor in the first shift and 25 to 30 in later shifts.

**Fire protection.** A definite majority of all plants responding give special training in the use of fire extinguishing equipment. Most firms rely chiefly on their plant fire department and secondarily on safety engineers, supervisors, and maintenance workers. Sometimes small companies seek instruction from city fire departments, heating engineers, equipment representatives, and personnel officials.

Twenty-nine large plants give instruction at least annually, and 19 firms do this monthly or more often. The greater number of smaller operations conduct instruction annually or at lesser intervals.

The standard procedure is to give instruction only to certain employees. Almost all of the large and more than half of the small operations select specific personnel to receive training. These may include the plant fire brigade, foremen, maintenance workers, the safety committee, or one man from each department.

In the section's efforts to provide safer working environments, training aids have proved valuable weapons. This arsenal includes employee publications, safety materials, contests, awards, incentive projects, and safety gimmicks.

Most prominently mentioned are employee booklets, motion picture films, sound slidefilms, safetygraphs, flannel boards, and opaque projectors. A few such plants also indicated use of demonstrations, in-plant slides, lectures, letters, and accident photos.

The majority of large plants prefer to incorporate employee booklets, motion picture films, and sound slidefilms in their indoctrination programs. And a third of the larger firms use safetygraphs; apparently, this enthusiasm is not shared by smaller plants.

Each operation seems to have its own convictions when it comes to training aids. For instance, large plants choose to show sound

slidefilms instead of motion pictures; smaller plants do the opposite. Flannel boards and opaque projectors were found to have relatively few users.

Employee booklets, the most commonly used training aid in all plants responding, are utilized by two-thirds of the large and by a third of smaller operations. Work forces in most big and more than half of the smaller firms receive or have access to booklets, pamphlets, letters, magazines, calendars, posters, bulletin board notices, and house organs.

Sources vary for these materials. The National Safety Council and insurance firms supply many items. Government agencies and local safety councils make other materials available.

**Posters.** Almost all operations, by the way, use safety posters. Three of four large firms and two of three small plants display these in every department. More than half of the smaller units place posters in less than 10 locations, while their larger colleagues usually put posters in from 10 to 29 spots. Half of the plants provide safety bulletins in each department.

The smaller plants seem to prefer changing posters monthly, or, as runner-up choice, weekly. Large firms are fairly evenly divided between monthly and weekly changes.

Less than half of the large plants use outdoor bulletin boards. A third of these set up large safety billboards in parking lots, at main entrances, or on top of main buildings.

None of these plants makes all of its own posters, the survey indicated. Most obtain posters from outside sources, such as the National Safety Council, and supplement these items with homemade products.

**Contests.** Sometimes plants hold contests between individual units, departments, or plants. These competitions may involve the best over-all safety records from a week to a year's duration, or may be specialized safety contests to reduce accident frequency or to recognize improvement in indi-

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This up-to-date film contains all of the important information on basic principles of First Aid and also demonstrates new artificial respiration method approved by the American Red Cross.

The only cost for this 34-minute 16-mm. sound film is return postage.

**Johnson & Johnson**

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Please send me information on the film "Help Wanted."

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"As a result of this tremendous saving in labor and materials, LEGGE Polishes are now used exclusively throughout the plant."

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Circle Item No. 48—Reader Service Card

vidual safety efforts. Awards differ, from trophies, merchandise, and plaques to cash and banquets.

**Suggestion plans.** About a third of all plants in the survey have suggestion plans. With several exceptions, these plants pay for safety ideas in amounts ranging from \$30 to \$2,500 total for the year in larger operations, and in a \$15 to \$465 spread in smaller plants. Some of the larger plants received as many as 750 suggestions (some as few as three), while in the smaller categories a high of 229 ideas (and a low of two) suggestions were submitted.

In plants that pay, a suggestion or safety committee usually evaluates ideas. These groups decide if a proposal will solve a problem in the plant, and, if so, how much the suggestion is worth in award monies.

For example, one plant has prepared safety suggestion award rules for use in paying for employee suggestions. Another company pays according to the accident severity corrected. And another operation gives a set amount for all acceptable safety suggestions.

Incentive awards to supervisors for improving or maintaining a certain safety record include bonuses, bonds, extra vacation time, luncheons and certificates, or a financial reward based on a formula. One monthly award consists of one cent per worker times the number of months since the last disabling injury (maximum 60 months), on a Division basis.

A minority of plants use employee safety awards or incentives (wallets, pins, pencils, work suits, and similar items) in their safety programs. These awards are based on anniversaries of maintaining safety records; man-hours worked without disabling injury; competition within plant, department, or divisional units; excellence in specialized safety efforts (eye or foot safety); and service on safety-promotion committees and groups. Value of awards usually is limited in these instances to a range between \$1 and \$10.

Some plants feel it is more effective to give many small awards

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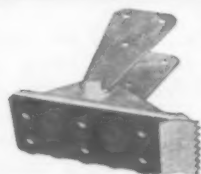
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Circle Item No. 49—Reader Service Card

National Safety News, September, 1958



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**Florco** is the most effective, practical and economical adsorbent for the maintenance of dry, safe, non-slip floors, decks and all porous surfaces.

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Circle Item No. 50—Reader Service Card

National Safety News, September, 1958

than a few larger prizes, stimulating more interest and participation in safety projects. One plant feels large prizes create more incentive and make a greater impression on competing workers.

**Reaching the family.** A minority of all plants responding include employees' families in safety contests and campaigns. Families are reached through radio spot announcements, mailings to the home, NSC calendars, pay envelope inserts, and house organ safety articles.

Specific members of the family—children, wives, and mothers—often are targets for safety. Some plants prefer to invite entire families of workers to attend safety banquets at which employees are recognized for their part in the safety effort.

**Gimmicks.** Safety reminders compete with radio, TV, hobbies, and sports activities for the attention of the worker and his family. Many safety directors, aware of this competition, have concocted various gimmicks and ideas to capture the imagination of supervisors.

**A monthly letter** from the safety department to foremen, or a personal letter to workers and families do the trick. Often, the installation of literature distribution racks in medical stations helps disseminate health and safety materials.

Use of a **safety board** has demonstrated its appeal. Each department is represented on the board by a lit green light. When a disabling injury occurs, a red light flashes on and stays on for one month.

Polaroid snapshots of poor plant practices are passed around at safety meetings as part of the program to instruct foremen. Special demonstrations, such as fire prevention techniques or the use of a wooden model man to show correct and incorrect methods of lifting, are frequently impressive.

Various companies enter state and local safety campaigns.

On-the-job interviews with new employees by safety engineers have proved helpful.

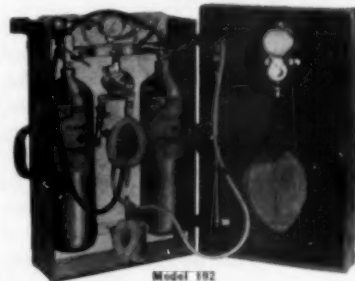
A safety record card file on

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Circle Item No. 51—Reader Service Card

all employees is a handy, significant reference.

Some states have a safety display bus that visits plants for a day, during which workers see the vehicle's safety exhibits.

**Power trucks**, used extensively in materials handling operations, have for some time been a major consideration in worker safety. This survey revealed that power truck operators receive special training in three-quarters of the large plants and in about a third of the smaller firms.

Training methods include oral instruction, safety meetings and films, use of special rule books, practice driving and instruction, special training by safety committee members, and the enforcing of probationary periods. In these periods the new employees are carefully watched to see if they can run power trucks without close supervision.

A small number of plants specify certain physical and mental requirements by which they



"And what burns me up most—you don't even have an ulcer!"

choose new truck operators. Desired qualities include good vision, mechanical inclination, and mental and manual agility. A small number of plants, either large or small, indicated they have licensed power truck operators.

**Crane operation** also is an important segment of many industrial systems. In this survey the Council investigated plant attitudes and practices toward safety in crane operation:

About half of the larger plants and less than a third of the smaller firms use a standard system of crane signals. Most of these report using the signal system of the American Standard Safety Code for Cranes, Derricks, and Hoists (ASA B-30.2-1943.)

Some plants give physical and mental tests, followed by a three-day training program and licensing of the operator. Hookers and crane operators in other projects receive an instruction sheet giving crane signals, which must be mastered. Another plant gives a five-hour training course in crane operation and safety hazards. One firm develops a fill-in operator through instruction for more than one year by an experienced crane man.

Most companies use written regulations for operation of cranes and hoists. These rules are based on lists compiled by state government departments, insurance companies, and equipment manufacturers.



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Here's a snug, warm stocking cap brought up-to-date for men who wear hard hats in winter weather. Windsocks easily adapt to any head size and give the comfort and protection against winds that only head-hugging caps can provide. And, there's **no** time consuming installation . . . **no** pulling them out of hard hats and installing them all over again every time a cold day comes along. The men will like them, and you will too. Order a dozen Windsocks today and see for yourself what they will do. (Quantity discounts on orders over 1,000.) Cost for one dozen is only \$3.00 plus postage.

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# WHAT'S NEW

IN

NATIONAL SAFETY COUNCIL SERVICES \*

## Latest on Fires: *Don't Be Alarmed*

The National Safety Council has published *Don't Be Alarmed*, an accordion-fold pamphlet giving the latest information and advice about fires. One of industry's deadliest foes, fires cost industry thousands of lives and dollars annually, the multicolored pamphlet points out.

Best protection against fire? A "heads-up" attitude by each employee—a knowledge that fires are caused by carelessness and lack of knowledge.

Common and uncommon causes of fires are presented in *Don't Be Alarmed*. The pamphlet comes with room on the cover for imprinting a firm name. Further information on this publication regarding quantity prices may be obtained from the National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.

\* Look to this page each month for latest news about NSC services. Address request for additional information, samples, or prices to the Membership Service Division.

## Index Available

The National Safety Council has published an "Index of Data Sheets."

It lists all data sheets by both the old and new series designations. Data Sheet GEN 1, for example, entitled *Slippery Floors*, now is D-286.

Persons with data sheets published prior to the designation changeover will need the index to file the sheets.

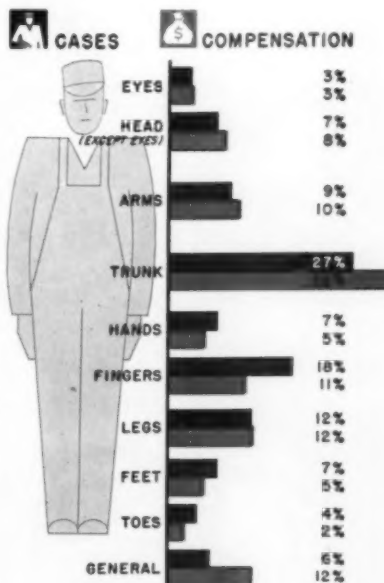
Single copies of the index are priced at 35 cents each.

## 1958 Accident Facts Available

Facts and figures on all types of accidents—industrial, traffic, motor transportation, home, farm, and school—are included in the 1958 edition of *Accident Facts*, now available.

The National Safety Council's statistical yearbook, *Accident Facts* devotes several sections to occupational accidents and provides a comprehensive background for an industrial safety program.

This annual publication contains a list of accident rates by major industrial groups, as well



Source: Reports of 11 state labor depts., mostly 1954.



as charts showing the trend of accidents. Other topics listed include the most common source of work injuries, the part of the body most often injured, off-the-job accident problems, and how unsafe acts and unsafe conditions contribute to permanent impairment and death.

According to the Council, the 96-page book provides ideas and facts for making speeches, writing articles, preparing reports and planning safety campaigns. Further information on quantity prices may be obtained from the National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.

# For a More Successful Poster Program



**NEAR ACCIDENTS  
ARE WARNINGS!**

JUMBO POSTER FOR NOVEMBER 1958

The Jumbo poster, issued monthly, is designed for outdoor use and is available to members on annual subscription but is not stocked. Its actual size is 9' 11" by 11' 8".

## SAFETY BANNER FOR NOVEMBER, 1958

Here is the attention-getting, monthly cloth banner. Available in two types—indoor and outdoor—both are identical in size (10 feet long by 40 inches high), have the same general message and multi-color design. Indoor type is of sturdy drill with grommets for easy hanging, while the outdoor banner is of extra heavy drill with wind vents, and has strong stitched-in rope for durability.



NATIONAL SAFETY COUNCIL

**P**OSTERS illustrated on the following pages are new, and actually are printed in two or more colors. For additional selections, see the eight previous issues of **NATIONAL SAFETY NEWS** and the 1958 Poster Directory.

**NOTE:** (1) Directory-listed posters will be stocked until October 1, 1958—at which time a new Directory will be under preparation. Starting October 1st, orders will be filled only as long as stocks are available, unless the demand makes additional printing economically practical. (2) Practically all posters in **NATIONAL SAFETY NEWS** in 1958 will be stocked until October 1, 1959.



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1427-A

8½x11½

This new four color poster is illustrative of the 72 four color posters shown in the 1958 Poster Directory.

Electrotypes of poster miniatures on this page are not available, nor can payroll inserts be supplied.



Posters below are printed in two or more colors  
(Available only in sizes indicated)



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1460-A 8½x11½



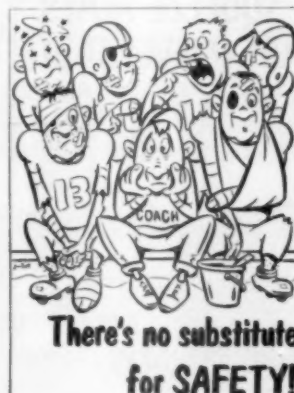
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1244-A 8½x11½



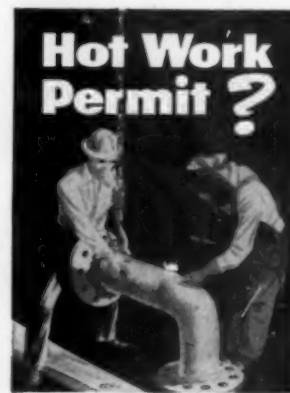
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1415-B 17x23



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1356-A 8½x11½



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1354-A 8½x11½



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1197-B 17x23

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T-1470-B

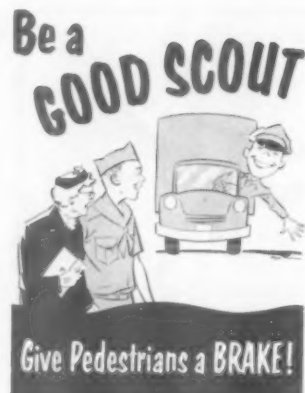
17x23



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T-1444-C  
T-1445-A

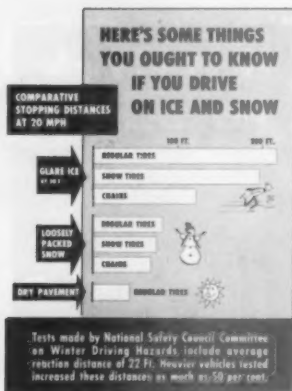
25x38  
8½x11½



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V-1441-B

17x23



Tests made by National Safety Council Committee on Winter Driving Hazards include average reaction distance of 22 ft. Heavier vehicles tested increased these distances by much as 50 per cent.

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V-1442-B

17x23



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V-1440-A

8½x11½



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V-1439-A

8½x11½

## POSTER ORDER FORM

### SHIP TO:

Organization \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

To attn. of \_\_\_\_\_

### SEND INVOICE TO:

Organization \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

To attn. of \_\_\_\_\_

### ORDERED BY

Customer's P.O. Number \_\_\_\_\_

PRICES EACH	"A" SIZE (ALL)	"B" SIZE (EXCEPT PREFIX T-)	"B" SIZE (PREFIXED WITH T-)	"C" SIZE
1-9	\$ .15	\$ .30	\$ .25	\$ .35
10-99	.092	.22	.18	.27
100-999	.063	.185	.15	.22
1,000-4,999	.052	.15	.12	.20

Prices subject to 10% discount to members. Quantity prices apply only on a single shipment to one location.

Quantity	Poster No.	Quantity	Poster No.

ADDRESS ORDER TO: NATIONAL SAFETY COUNCIL, 425 N. MICHIGAN AVE., CHICAGO 11, ILLINOIS

Electrotypes can be furnished for all posters illustrated above.

## Solvents

—From page 33

problem will be to make sure that for the solvent chosen, the M.A.C. is not exceeded. This can be done by providing suitable ventilation.

Howard Gadberry of the Midwest Research Institute published excellent information on this subject in the NATIONAL SAFETY NEWS, December 1954. He explains the use of a ventilation rate equation enabling you to calculate the amount of ventilation required to maintain a safe working atmosphere.

$$\frac{\text{cfm.}}{\text{gals. per hr.}} = \frac{53.7 \times \text{Sp. Gr.} \times 10^6}{\text{Mol. Wt.} \times \text{M.A.C.}}$$

In using this equation one would have to determine by actual experience or experiment how many gallons of the safety solvent are evaporated per hour under the conditions of use. One easy way to determine this would be to take a measurement of the tank or drum of safety solvent before and after one hour's use and determine how much was lost. This could be considered evaporation.

Consider carbon tetrachloride:

Molecular weight ..... 153.84  
Specific gravity ..... 1.595  
M.A.C. .... 25

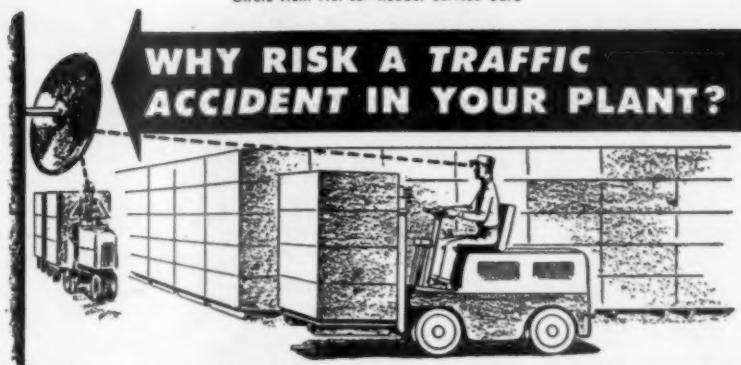
Substituting these in the equation, we obtain as the answer 22,300 cfm. per gallon carbon tetrachloride used.

This means if the evaporation of carbon tetrachloride is one gallon per hour, you would have to install exhaust fans, fume hoods, or other ventilating equipment capable of moving 22,300 cfm. of air.

This may seem like a great deal of air movement where just one gallon of solvent is being consumed per hour. However, it usually isn't realized how little of a toxic liquid is needed to create a hazardous atmosphere, or to exceed its M.A.C. In Table I we have listed the quantity of solvent required to reach its M.A.C. in an unventilated room 10 x 10 x 10 ft., or 1,000 cu. ft.

A teaspoon contains approximately 4 ml. You can realize how easy it is to exceed the safe work-

Circle Item No. 52—Reader Service Card



## WHY RISK A TRAFFIC ACCIDENT IN YOUR PLANT?

**KLEAR-VU SAFETY MIRRORS** are the answer to the dangerous blind corner problem in your plant or warehouse. They are also adaptable for outdoor use in your parking lot, loading dock area or other points where traffic converges.

Mounted at cross aisle intersections, entrances and exits at a height of 8 to 10 feet, Klear-Vu Safety Mirrors clearly reflect oncoming intersection traffic to both power truck operators and pedestrians.

Style	No.	Dimensions
Circular Convex Glass	120	12" dia.
Circular Convex Glass	180	18" dia.
Circular Convex Glass	240	24" dia.
Circular Convex Glass	300M.R.	30" dia.
Circular Convex Glass	360M.R.	36" dia.
Flat Glass Rectangular	918	9"x18"
Flat Glass Rectangular	1648	16"x24"

M.R. indicates metal rim.

Special sizes made to order, Polished flat metal mirrors available.

Available in either convex or flat glass styles, the mirrors are easily installed and quickly adjustable to any desired angle.

**LESTER L. BROSSARD CO.**

340 N. MICHIGAN AVE., CHICAGO 11, ILL.

Write for  
Bulletin.

## NEW FROMMELT PORTO-SCREEN

THE VERSATILE WELDING SCREEN KIT THAT ASSEMBLES WITH ANY STANDARD PIPE OR TUBING

Porto-Screen kits include hinges, tees, treated fabric, hooks . . . everything except 1/2" pipe or tubing, which you add yourself! Porto-Screen forms a rugged, portable, low-cost, fireproof shield that folds compactly for storage or carrying. Available in 5' or 6' heights, 9', 12' or 15' lengths, with yellow or green UL approved duck, or Weld-Tex neoprene coated glass cloth.

## Spa-Fla® LOW COST WELDING SHIELDS

Flexible galvanized wire insert permits forming around the job and rolling up for easy carrying. "D" rings provided for hanging on overhead work. Standard or custom sizes in four UL approved fire, water, mildew-resistant fabrics.

WRITE FOR FREE CATALOG AND PRICES TODAY!

**FROMMELT INDUSTRIES**  
DUBUQUE, IOWA

ing limit for a solvent in confined areas. Less than a teaspoonful of carbon tetrachloride or benzene creates a health hazard in your average-sized home room or small office. When your people clean a typewriter or remove a spot with a dry-cleaning fluid, how much solvent do you think they use? It's worth consideration.

Regarding health hazards, we should also know a few facts about the effect of temporary overexposure to solvent fumes. In the case of carbon tetrachloride we know continuous exposure to over 25 ppm may be harmful, but acute poisoning can result when a person is exposed to 5,000 ppm for only 5 minutes.

Longer exposures to this concentration, or even short exposures to concentrations above 24,000 ppm, usually result in eventual death. This type of temporary overexposure occurs often enough to warrant closer study.

We had a situation in New Jer-

sey where a coffee-extracting kettle was being heated during a cleaning process. Someone opened the wrong valve and trichlorethylene was allowed to flow into this hot empty kettle. The entire plant area was almost instantly blanketed with trichlorethylene fumes far in excess of its M.A.C. One death and several serious illnesses resulted.

### Skin Irritation

Wherever solvents are used for cleaning purposes in a hand operation, dermatitis can become a problem. Most safety solvents are non-irritating, but they are excellent degreasers. Continuous contact with the skin may cause dryness and possible cracking, which could easily lead to dermatitis, especially where unsanitary practices exist.

Where workers must clean by hand, plastic-coated gloves should be available so prolonged contact

with the skin is avoided. Frequent use of good lanolin-containing skin creams is recommended to counteract dryness.

Skin protective creams, while helpful, are seldom adequate. We find the frequency of such dermatitis outbreaks is usually greater when cold weather starts. The normal tendency of the skin to become chapped, together with the drying effect of the solvent, leads to this condition.

Concerning fire hazards, for far too long safety people have relied on flash point as the sole criterion for evaluating flammability. True, flash point is an indication of how readily vapors of a solvent will ignite, for the flash point is the lowest temperature at which enough vapors are given off to form a flammable mixture of vapors and air immediately above the liquid surface.

Flash point determinations, using the Cleveland open cup, Tag closed cup, and Pensky-Marten

## BEST GENERAL-PURPOSE LADDER BUY...

### Low-Cost, Quality-Built

## "Gold Medal"

### "SAMSON" STEP LADDERS

FOR MEDIUM DUTY USE

### Last Longer—cost less to use More safety and design features

"Gold Medal" Ladders are carefully manufactured of only the best, selected materials. Special features provide maximum strength and safety in use, convenience in storage and light weight for easy handling. Their longer life means lower over-all ladder costs to you.

PS Co's nation-wide sales organization is thoroughly experienced in helping you get the *right* ladders for your needs. Reach your local representative through your 'phone directory under ladders, "Gold Medal".



FOR GREATER SAFETY...EFFICIENCY...ECONOMY

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This is only one of a complete line of "Gold Medal" Wood Ladders *quality-built* for greater safety, efficiency and economy of use. Included are: Step Ladders for electricians, painters, carpenters and other trades; Heavy-Duty Step Ladders; Single and Extension Ladders and Platform Stages. Write for Catalog L-71-RR.



closed cup methods, frequently vary by as much as 10 to 25 degrees.

One trouble with the use of flash point as a guide to flammability is that many people assume so long as the temperature in the working area is not above the flash point of the solvent, no fire hazard exists.

If you are using mineral spirits with a flash point of 105 F in a room with an average temperature of 68 to 80 F, it is wrong to assume a fire hazard doesn't exist.

In every room or working area, there is a point where the flash point of 105 is probably exceeded. It may be on the surface of an electric light bulb or a spark from a motor or static electricity. Solvent vapors can ignite at any of these points.

Many useful properties of solvents depend on rapid evaporation or fast drying or on high vapor pressure. A solvent with a rapid rate of evaporation will produce a

high concentration of solvent vapors in the air surrounding the liquid. This vapor-air mixture will ignite more easily than the liquid.

Thus, the speed of evaporation, although desirable for many purposes, often introduces increased fire hazard. This is true for almost all solvents except some halogenated solvents. Included in this class are such chlorinated materials as carbon tetrachloride and trichlorethylene, which are not flammable. But don't make the mistake of assuming all chlorinated solvents are not flammable.

Another reason why flash point does not usually provide sufficient measure of fire hazard is that many safety solvents are complex mixtures of various ingredients. By introducing a small amount of non-flammable chlorinated solvent into the mixture, one can produce a product which will show no flash point by conventional methods of test and yet is highly flammable.

A manufacturer of such a product might state on his label, "Flash point—none." On reading this, the user would assume he was dealing with a non-flammable solvent. A rag soaked with such a product would burn readily if a match were touched to it.

This type of blended safety solvent can be detected by the various ingredients evaporating at different rates. The chlorinated or non-flammable ingredient is usually the fastest-evaporating portion of such a mixture.

To safeguard yourselves against this type of non-uniform mixture, flash point tests should be repeated after evaporation of 50 per cent of the solvent. If flash point before and after evaporation of 50 per cent of the solvent remains approximately the same, you can be reasonably certain the safety solvent is a uniform-evaporating material and does not change its flammability properties as it dries.

If a product will burn, whether

## SPEED OFF-THE-GROUND WORK

WITH PATENT SCAFFOLDING CO., INC.

### ALUMINUM Ladders and Rolling Scaffolds

LIGHT • STRONG • SAFE • LAST LONGER • EASIER-TO-HANDLE



#### New HEAVY DUTY SAFETY PLATFORM STEP LADDER—

Non-slip platforms and steps, safety corrugated. 14½" x 18" platforms, 2' from top. 3¾" wide steps. Rubber feet on both front and back. Heavy duty rear rungs. Platform heights, 3' to 12'. Write for Bulletin L-88.

#### EXTENSION LADDERS—

Easily adjusted, self-locking, 16' to 40' lengths. SINGLE LADDERS from 8' to 20'. Write for Catalog L-71RR.

#### 4'6"-WIDE LADDER SCAFFOLDS—

Large platform area with two available working levels. Heavy duty wheel, dual-brake steel casters. Spans of 6', 8', 10'. Built-in ladder. Easily added sections increase height. Write for Bulletin AS-7.

#### 29"-WIDE LADDER SCAFFOLDS—

Same features as 4'6"-wide scaffolds. Fit through 30" doorways. Write for Bulletin AS-7.



IMMUNE TO RUST • ROT • MILDEW • CORROSION RESISTANT

P. S. Co's nation-wide sales organization is thoroughly experienced in helping you get the *right* ladders or scaffolds for your needs. Reach your local representative through your 'phone directory under ladders or scaffolds, "Gold Medal."

FOR GREATER SAFETY...EFFICIENCY...ECONOMY



**THE PATENT SCAFFOLDING CO., Inc.**

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1550 Dayton Street, Chicago 22, Ill.  
Branches in all Principal Cities

*when Seconds count*



## EMERGENCY BLANKET and Quick Release WALL CANISTER

Allows for conspicuous placement throughout the work area. Blanket releases instantly or entire unit may be lifted from the wall and carried to point of use.

Canister is of heavy gauge metal. 8½" diameter by 20" high. Bright red enamel finish. Woolen or asbestos blanket may be furnished.

WRITE FOR  
BULLETIN No. 94



*Safety Equipment for all Industries*

### INDUSTRIAL PRODUCTS COMPANY

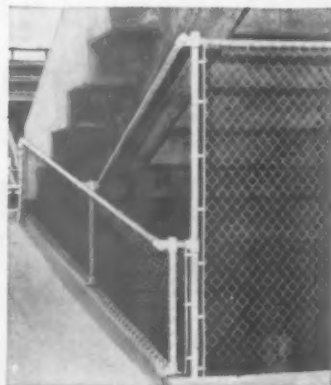
2850 N. Forth Street • Philadelphia 33, Pa.

**NO  
THREADING  
NO  
WELDING  
UP TO  
30% SAVING**  
on pipe frames built  
with  
**NU-RAIL®**  
fittings



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MANUFACTURING  
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You'll find many ways to speed up fence frame construction and cut down on erection costs with NU-RAIL Slip-On Fittings. Simply slip the fitting on the pipe, tighten the set-screws with a hex wrench—that's all there is to it. With five basic fittings you can make up any combination for any fence arrangement. There's no threading or welding, and pipe cutting is reduced to a minimum.

Leading distributors handle these aluminum fittings, both NU-RAIL and the lighter duty SPEED-RAIL Fittings. Write for descriptive Bulletin #15-S.

Circle Item No. 57—Reader Service Card

its flash point is high or low, it should be treated as potentially hazardous.

Some of these ideas were effectively demonstrated in tests we ran at a large railroad engine overhaul station. The purpose of the study was to establish ventilation requirements during the cleaning of diesel engines and electrical equipment to assure a safe working atmosphere. Ventilation needs were calculated and set up, using the equation mentioned earlier.

A Davis halide meter measured the concentration of chlorinated solvent in the area of the operator's face. The operator was spraying a safety solvent based on 1, 1, 1 trichloroethane and using a shop-made solution-lifting gun with a ½-in. homemade spray nozzle operated by air pressure at 90 psi.

Immediately after the operation started, the halide meter registered far in excess of 500 ppm. Close study indicated this crude spray device was causing coarse droplets of fluid to bounce off the work and back into the operator's face.

By changing the shop-constructed spray device to a suitable atomizer, spray droplets were reduced in size and effectively handled by existing ventilation. The atmosphere in the neighborhood of the operator's face now did not rise above 200 ppm, which is safely within the 500 ppm M.A.C. listed for 1, 1, 1 trichloroethane.

Incidentally, the rapid development of static electricity in the shop-made spray nozzle was traced to the rapid movement of air and solvent through the nozzle. Sparking was clearly evident between the nozzle and various parts of metal surfaces being cleaned.

This situation certainly would have constituted a severe fire hazard if a flammable cleaning solvent were used, and points up the general need for grounding such cleaning systems or any setup where flammable liquids are dispensed.

This example also demonstrates how the body can be subjected to the action of the liquid cleaning solvent through ingestion of liquid droplets, even though ingestion of

a liquid is not usually considered a serious industrial hazard.

Fortunately in this case, existing data indicates the body is capable of throwing off effects of 1, 1, 1 trichloroethane, which does not build up and cause damaging effects on the liver, kidneys, and circulatory system as do many other chlorinated solvents.

When solvents are sprayed in various types of cleaning operations and painting procedures, we must be constantly aware of the increased existence of fire hazard. We are concerned not only with the flammability of vapors produced but also of the liquid droplets.

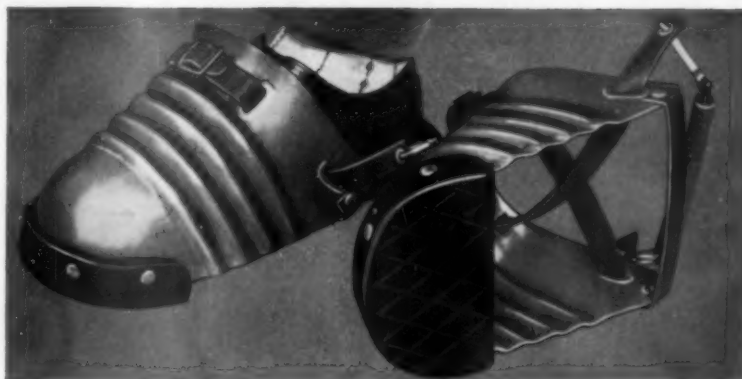
Sprayed droplets of solvent are usually not merely flammable, but these droplets vaporize faster, giving rise to greater concentration of vapors in the atmosphere. And, as you know, a high flash point solvent will ignite easily when sprayed in the vicinity of a flame.

There is one thought I'd like to leave with you. Those who can't do without that extra drink and those who have accumulated extra weight should remember that alcoholic indulgence and obesity increase susceptibility to toxic reaction.

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## FOOT-TOE-LEG Protection by "Sankey"



### "SANKEY" IMPROVED FOOT GUARD

The metal shield (above) is designed to furnish a maximum amount of protection to the entire front of the foot—not merely the toes alone, but also to the instep against hazards from falling, rolling or flying objects, or from accidental tool blows.

- Absolute freedom of leg motion, utmost protection and comfort come with the leg-contour shaped "Sankey" fibre shin guard (right).

- Fibre knee-shin guard (right) provides flexible knee movement on jobs with both knee and shin hazards.

For more information write today

**ELLWOOD SAFETY APPLIANCE CO.**

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## Powdered Soap

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# Lightfoot

EVERY TYPE OF SKIN CLEANSER

manufactures all three from raw material to finished product!

A Specialized Soap for Every



Type of Plant Requirement!

Whether for light, heavy or extra heavy duty, for general plant or office use, or to solve specific cleansing problems, our more than 40 years of experience in serving industry is at your service. Your inquiries will receive prompt and intelligent attention!

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## COMMON SENSE SAFETY FOR PUNCH PRESSES

Direct quotes from a survey of users show their reasons for switching to Safeguard pullouts.

### • Protection from repeats.

"Most important feature is that which makes it impossible for the operator to be 'caught' by any pneumatic, electrical or mechanical failure of the press or its controls"

### \*\* Production

"A definite increase in production due to the fact that the press operators may now release the press from the foot pedal leaving both hands free to pick up work for the next cycle"

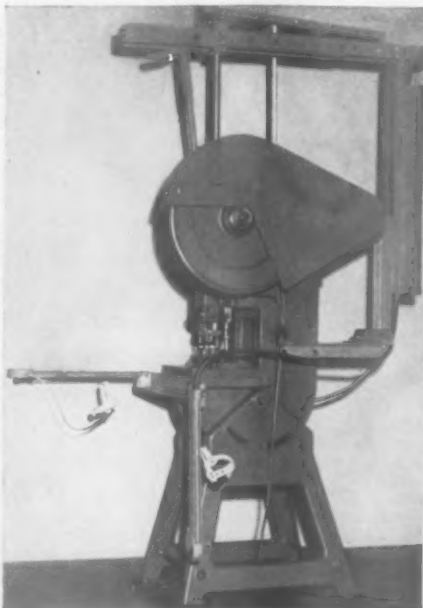
"Prior to Safeguards, production standards—(were) 841 to 1508 pcs. per hr. —after Safeguard, 934-1915 pcs. per hour."

"I am enclosing a sample piece from one of the presses on which we are using Safeguard. The rate on this particular job is 2,500 pcs. per hour."

### \*\*\* Operator Acceptance

"It was only a matter of days after the first trial-before the operators were expressing interest in getting more of them."

Write for full information



**Safeguard Manufacturing Co.  
Woodbury, Conn.**

**SURETY**  
**SURESEAL**  
**GOES**  
**HAND in GLOVE**  
**WITH THE**  
**TOUGH JOBS**



Your production machinery is an extension of the skilled hands that operate it. Protect those hands with Surety Sureseal gloves.

Sureseal, with exclusive Turn-Cuff, gives maximum security against crippling accidents and skin diseases wherever hands are exposed to chemicals, solvents, oils, etc. Sureseal means savings, too, because production increases and costs drop where injury causes are minimized.

Sureseal, made from Hycar, offers more effective resistance to solvents and other caustic liquids and lasts up to 14 times longer than rubber and other synthetics. Test Sureseal at our expense. Write us on your letterhead outlining the job requirements and we'll send you a pair of Sureseals by return mail.



**THE**  
**SURETY**  
**RUBBER CO.**  
CARROLLTON, OHIO

In Canada: Safety Supply Co., Toronto

Circle Item No. 61—Reader Service Card

## Distinguished Service

—From page 61

**B. F. Goodrich Co.**, two awards: Du Bois, Pa., Plant; Wilkes Barre, Pa., Plant.

**Goodyear Tire & Rubber Co.**, two awards: Reclaim Plant, Akron, Ohio; Muncie, Ind., Plant.

**W. R. Grace & Co.**, Davison Chemical Co., Charleston, S. C.

**Great Northern Railway Co.**, two awards: Dale Street Shop, St. Paul, Minn.; Special Agents Dept., St. Paul, Minn.

**Grinnell Corp.**, Wrightsville, Pa., Valve Co.

**Harbison Walker Refractories Co.**, two awards: Cuivre Mine, Pittsburgh, Pa.; Gasconade Mine.

**Harshaw Chemical Co.**, three awards: Cleveland, Ohio, Plant; Gloucester City, N. J., Plant; Semi Works Div., Cleveland, Ohio.

**H. J. Heinz Co.**, Salem, N. J.

**Hercules Cement Co.**, American Cement Corp., Nazareth Stockertown, Pa.

**Hercules Powder Co.**, two awards: Bacchus, Utah, Plant; Milwaukee, Wis., Plant.

**Honorbilt Products, Inc.**, Philadelphia, Pa.

**Humphreys Gold Corp.**, Highland Plant, Lawtey, Fla.

**Huron Portland Cement Co.**, Cleveland, Ohio.

**Ideal Cement Co.**, two awards: Montana Division, Trident, Mont.; Spokane, Wash., Div.

**International Milling Co.**, six awards: Davenport, Iowa, Plant; Lockport, N. Y., Plant; New Prague, Minn., Plant; Newton, Kan., Plant; Ponca City, Okla., Plant; St. Paul, Minn., Plant B.

**International Minerals & Chemical Corp.**, three awards: Americus, Ga., Plant; Skokie, Ill., Plant; Woburn, Mass., Plant.

**International Refineries, Inc.**, Wrenshall, Minn.

**Jas. W. Glover, Ltd.**, Quarry & Crusher & AC, Honolulu, T.H.

**Johns Manville Corp.**, two awards: Marrero, La., Plant; Tilton, N. H., Plant.

**Jones & Laughlin Steel Corp.**, six awards: Atlanta, Ga., Container Div.; Cincinnati, Ohio, Warehouse; Cleveland, Ohio, Container Div.; Container Div., Kansas City, Kan.; Research Laboratories, Pittsburgh, Pa.; N. Y. Warehouse, Long Island, N. Y.

**Kaiser Aluminum & Chemical Corp.**, two awards: Permanente, Calif., Plant; Permanente, Calif., Shops.

**Kaiser Gypsum Co., Inc.**, two awards: Antioch, Calif., Plant; Seattle, Wash., Plant.

**Keystone Portland Cement, Bath, Pa.**  
**Koppers Co., Inc.**, 14 awards: Carrollville Plant, South Milwaukee, Wis.; Chemaco Plant, Berkeley Heights, N. J.; Penacol Plant, Petrolia, Pa. Tar Production Div: Buffalo, N. Y., Plant; Fontana, Calif., Plant; Gar-



wood Plant; Meadows, N. J., Plant; Seaboard Plant, Kearney, N. J.; Swedeland Plant; Utica, N. Y., Plant; Warren, Ohio, Plant; Woodward Plant; Youngstown, Ohio, Plant. Tech Dept., Vernon, Pittsburgh, Pa.

Land O Lakes Creameries, Inc., Single Branch, Milwaukee, Wis.

Lehigh Portland Cement Co., two awards: Mason City, Iowa; Metaline Falls, Wash.

Linde Co., (Div of Union Carbide Corp.) 34 awards: Acetylene Plant S, Charleston, W. Va.; Acetylene Plant, St. Louis, Mo.; Albany, N. Y., Plant; Baltimore, Md., Plant; Canton, Ohio, Plant; Cleveland, Ohio, Plant; Crystal Plant, E. Chicago, Ind. Combination Plants: Allentown, Pa.; Altoona, Pa.; Charlotte, N. C.; Grand Rapids, Mich.; Harrisburg, Pa.; Mobile, Ala.; Oklahoma City, Okla.; Pittsburgh, Pa. Erie, Pa., Plant; Flame Plating Dept., Speedway, Ind.; Kittanning, Pa., Plant; New Orleans, La., Plant; Oxygen & Greggton Aux., Dallas Tex. Oxygen Plants: Ashtabula, Ohio; Berkeley, Calif.; (Oxy-Acet.) Casper, Wyo.; Buffalo, N. Y.; Duquesne, Pa.; East Chicago, Ind.; Los Angeles, Calif.; (Oxy-Aux) Salt Lake City, Utah; (Aux-Stat) Savannah, Ga.; Tampa, Fla.; Wichita, Kan. Speedway Combination Plant, Indianapolis, Ind.; Sta & Warehouse N, Kansas City, Mo.; Syracuse, N. Y., Plant.

Lobl Mfg. Co., Middleboro, Mass.

Lockheed Air Terminal, Inc., Burbank, Calif.

MacLean Fogg Lock Nut Co., Chicago, Ill.

Marquette Cement Manufacturing Co., two awards: Cowan, Tenn.; Superior, Ohio.

Material Service Corp., three awards: Cayuga, Ind., Sand Gravel Plant; Lockport, Ill., Sand & Gravel Plant; Morris, Ill., Plant 1.

Maytag Co., Hampton, Iowa, Plant.

Mead Corp., Nashville, Tenn., Div.

Medical Supply Co., Rockford, Ill.

Medina Electric Coop., Inc., Hondo, Tex.

Medusa Portland Cement Co., three awards: Dixon, Ill.; Wampum, Pa.; York, Pa.

Merck & Co., Inc., two awards: East Coast Branch, Rahway, N. J.; Marine Magnesium Div. S, San Francisco, Calif.

Miller Equipment Co., Inc., Franklin, Pa.

Russell Miller Milling Co., Minneapolis, Minn.

Missouri Portland Cement Co., Independence, Mo.

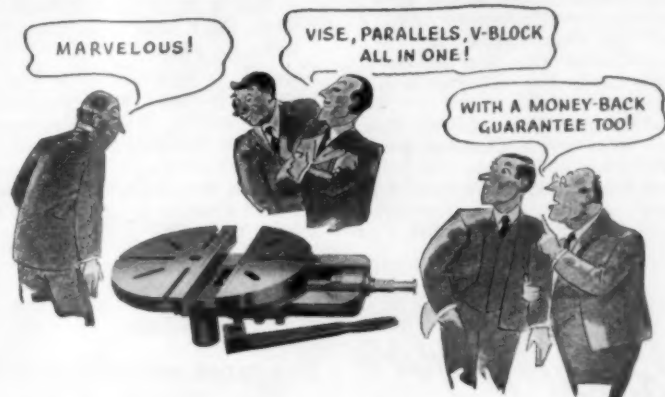
Monarch Cement Co., Humboldt, Kan.

Monsanto Chemical Co., five awards: Lion Oil Co., Natural Gasoline Dept., El Dorado, Ark.; Lion Oil Co., Pipeline Dept., El Dorado, Ark.; Port Plastics, Ohio, Plant; Research Dept., El Dorado, Ark.; Oakville, Ltd., Oakville, Ontario, Can.

McGraw Electric Co., Line Material Co., E Stroudsburg, Pa.

National Biscuit Co., six awards: Battle Creek, Mich.; Dayton Cone, Dayton, Ohio; Evanston, Ill.; Rochester, N. J.;

## SAVES TIME! SAVES FINGERS!



## MODERN Safety Drill Table!

**FREE  
TRIAL OFFER**

write for full details

The handiest, fastest, safest way to make drilling set-up! Just drop in and drill—all shapes—all sizes. We guarantee it will save its cost in labor alone in six months—to say nothing of the savings from uninterrupted production. We'll put one in your shop for 30 days. Not one penny cost to you if you aren't enthusiastic. Literature on request.

**MODERN MACHINE TOOL CO.**

2005 LOSEY AVENUE  
Jackson, Michigan

## SAFETY BULLETINS

**SPEED-UP**

CAR UNLOADING TIME

**SLOW DOWN**

ACCIDENT RATES

with the

**B & J SAFETY FRICTION WRENCH**

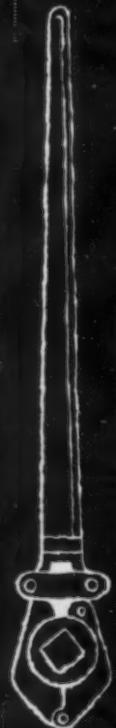
The B & J Safety Friction Wrench dumps and winds up hopper car doors fast because it releases instantly, and operates with the slightest pressure. The extra long handle gives greater leverage, and also permits the employee to stand clear and out of danger.

The B & J Safety Friction Wrench is simply designed so that constant repairing is eliminated—no springs, bolts nor ball bearings to cause trouble; no panels or triggers to catch. Order a B & J Wrench today.

This advertisement is shown here posted on a Diamond Bulletin Board, another product of Safety First Supply Company.

**SAFETY FIRST SUPPLY COMPANY**

425 MAGEE STREET • PITTSBURGH 19, PA.



St. Louis, Mo.; York Pretzel, York, Pa.  
**National Broadcasting Co.**, three awards: Station KNBC, San Francisco, Calif.; Washington, D. C., Station; WRCV-WRCV TV, Philadelphia, Pa.  
**National Carbon Co.**, Div. of Union Carbide Corp., Dev Lab Post & NF, N. Y.  
**National Company, Inc.**, Malden, Mass.  
**National Distillers & Chemical Corp.**, New Orleans, La., Plant.  
**National Distillers Products Corp.**, four awards: Bellows Plant, Louisville, Ky.; Old Grand Dad, Frankfort, Ky.;

Old Taylor, Frankfort, Ky.; Peoria, Ill., Div.  
**National Gypsum Co.**, four awards: Akron, N. Y., Plant; Kalamazoo, Mich., Plant; Niles, Ohio, Plant; Matteson, Ill., Plant.  
**National Vulcanized Fibre Co.**, two awards: Marshall Bros. Div., Yorklyn, Del.; Yorklyn, Del., Plant.  
**New York Transit Co., Inc.**, Oil Pipe Line, Lima, Ohio.  
**New York Wire Cloth Co.**, two awards: Durall Products Div., York, Pa.; Wire Mill, York, Pa.

**Nobles Cooperative Electric**, Worthington, Minn.  
**Northampton & Bath Railroad**, Northampton, Pa.  
**Northern Pipe Line Co.**, Oil Pipe Line, Lima, Ohio.  
**North Range Mining Co.**, Leonidas Mine, Negaunee, Mich.  
**Olympic Portland Cement Co., Ltd.**, Bellingham, Wash.  
**Owens Illinois Glass Co.**, three awards: Glasco Products Co., Chicago, Ill.; Indiana Plant 25, Terre Haute, Ind.; Plant 91, Pacific Grove, Calif.  
**Peerless Photo Products, Inc.**, Shoreham, L. I., N. Y.  
**Penetone Co.**, Tenafly, N. J.  
**S. B. Penick & Co.**, Jersey City, N. J.  
**Penn Dixie Cement Corp.**, three awards: Buffalo, N. Y.; Kingsport, Tenn.; Plant 5, Nazareth, Pa.  
**Phillip Carey Mfg. Co.**, Lockland, Cincinnati, Ohio  
**Pickands Mather & Co.**, six awards: Carmi Carson Lake Open Pit Mine, Utica Mining Co.; Erie Dock Co., Erie, Pa.; Hibbing Laboratory, Erie Mining Co.; Mahomen Open Pit Mine, Cuyuna Ore Co.; Tioga 2 Open Pit Mine, Western Mining Co.; West Hill Open Pit, Western Mining Co.  
**Pickwick Electric Cooperative**, Selmer, Tenn.  
**Pillsbury Mills, Inc.**, five awards: Globe Mills Div., Astoria, Oregon; Nashville, Tenn., Plant; Atchison, Kan., Plant; Wellsburg, W. Va., Plant; Wichita, Kan., Plant.  
**Pittsburgh Coke & Chemical Co.**, Green Bag Cement Div., Pittsburgh, Pa.  
**Pittsburgh Plate Glass Co.**, six awards: Atlanta Paint, East Point, Ga.; Forbes Finishes Div., Cleveland, Ohio; Houston, Tex.; Paint Brush Div., Springdale, Pa.; Portland, Ore.; Torrance, Calif.  
**Port of New York Authority**, three awards: Port Authority Bldg., New York, N. Y.; Port Authority Bus Terminal, New York, N. Y.; Staten Island Bridges, New York, N. Y.  
**Procter & Gamble Co.**, two awards: Iowa City, Iowa, Plant; Sacramento, Calif., Plant.  
**City of Duluth Public Utilities Water Div.**, Minn.  
**Quaker Oats Co.**, three awards: Chemical Plant, Memphis, Tenn.; Omaha, Neb., Plant; Tecumseh, Mich., Plant.  
**Ralston Purina Co.**, 15 awards: Battle Creek, Mich., Plant; Davenport, Iowa, Plant; Delmar, Del., Plant; Gainesville, Ga., Plant; Jackson, Miss., Plant; Los Angeles, Calif., Plant; Lubbock, Tex., Plant; Ry Krisp Div., Minneapolis, Minn.; Feed Mfg. Plant, Nashville, Tenn.; Pocatello, Idaho, Plant; Richmond, Ind., Plant; Sanitation Plant, St. Louis, Mo.; Stockton, Calif., Plant; Tampa, Fla., Plant; Wilson, N. C., Plant.  
**Republic Steel Corp.**, four awards: Culvert Div., Canton, Ohio; Union Drawn Steel Div., Beaver Falls, Pa.; Union Drawn Steel Div., Gary, Ind.; Steel & Tubes Div., Elyria, Ohio, Plant.  
**Revere Copper & Brass, Inc.**, Riverside Calif., Mfg. Div.

Circle Item No. 64—Reader Service Card

## Halsey Taylor ..the most modern line of drinking-water equipment you can buy



No. 5651—Ultra-modern recessed type, Vitreous China; self-closing stop, push-button glass filter. Two-stream projector, automatic stream control.



No. 5623—Streamlined face-mounted drinking fountain, heavy vitreous china, integral trap housing, concealed wall hanger. Two-stream mound-building projector and Halsey Taylor automatic stream control.



No. 5616—Face-mounted, vitreous china. Same specifications as No. 5623, except has 16" back wall face height.  
 No. 5601—Face-mounted, vitreous china. Same specifications as No. 5623, except has 12" back wall face height.



No. 5702—Battery Type. Concealed hangers. Two separate union supply connectors with positive shut-off valves. Two two-stream projectors, automatic stream control.

Halsey Taylor coolers, too, are available in wide variety—see latest catalog, or Sweets

### Modern in Design... TAYLORed for you!

You'll find Halsey Taylor Drinking Fountains modernly designed to blend harmoniously with individual interior decor! And, even more important, they are the products of a house devoted exclusively to the manufacture of quality drinking-water equipment.

The Halsey W. Taylor Co., Warren, O.

90

## BABCOCK Industrial Safety Engineered LADDERS

FIRST Choice of Industrials and Contractors. The NEW Safety Step (right) is only one of Babcock's complete line of Industry-tested ladders. Built for a long life of service—BABCOCK quality in every inch.



Write for the Babcock Industrial Ladder Folder, describing other Extension Ladders, Single Ladders and Step Ladders.

BE SURE • BE SAFE • BUY BABCOCK

the W. W. BABCOCK CO., INC.  
BATH, NEW YORK

Circle Item No. 65—Reader Service Card

Reynolds Metals Co., two awards: Robertshaw Fulton Acro Div., Hillsboro, Ohio; Vernon, Calif., Plant.

Rheem Manufacturing Co., Houston, Tex.

Riverside Cement Co., Victorville, Calif.

F. S. Royster Guano Co., three awards: Jackson, Miss., Plant; Lynchburg, Va., Plant; Madison, Wis., Plant.

Safety First Supply Co., Pittsburgh, Pa.  
Schenley Industries, Inc., three awards: Assoc. Ky. Distilleries, Ekron, Ky.; Geo. T. Stagg Co., Limestone Spr., Ky.; Jos. S. Finch & Co., Cedarhurst, Md.

Sciaky Brothers, Chicago, Ill.

Joseph E. Seagram & Sons, Inc., seven awards: Blair Distilling Co., St. Francis, Ky.; Calvert Dist. Co., Pine Bluff, Ark.; Milan, Ind., Plant; Old Colonel Dist., Midway, Ky.; Old Farmers Dist., Inc., Athertonville; Old Lewis Hunter Dist. Co., Cynthia; White Oak Cooperage Co., Louisville.

Sherwin Williams Co., Dallas, Tex.

Signode Steel Strapping Co., Wierton, W. Va., Plant.

Southeast Colorado Power Assn., La Junta, Colo.

Southern Lumber Co., Div Potlatch Forest, Inc., Sawmill Warren, Ark.

Spencer Chemical Co., F.G.A.N. Section, Pittsburg, Kan.

Standard Lime & Cement Co., Pleasant Gap, Pa.

The Standard Oil Co., three awards: Neodesha, Kan., Refinery; No. 2 Refinery, Cleveland, Ohio; Toledo, Ohio, Refinery.

Standard Register Co., Atlantic Div., York, Pa.

Stauffer Chemical Co., 14 awards: Agricultural Research Lab., Los Altos, Calif.; Bentonville, Va., Plant; Berkeley, Calif., Plant; Calhio Chem., Inc., Perry, Ohio; Chauncey Engineering Dept., N. Y.; Chauncey, N. Y., Plant; Chauncey, N. Y., Research Center; Houston, Texas, Plant; Louisville, Ky., Plant; Niagara Falls, N. Y., Plant; Perry, Ohio, Plant; Roanoke, Va., Plant; St. Louis, Mo., Plant; Tacoma, Wash., Plant.

Strathmore Paper Co., Savannah, Ga., Bag Div.

Sun Oil Co., seven awards: MS Dynafuel; SS Eastern Sun; SS Maryland Sun; SS Ohio Sun; MB Passaic Sun; MB Sunoco; SS Western Sun, all at Marcus Hook, Pa.

Swift & Co., Plant Food Div., Albany, Ga.

Sylvania Corning Nuclear Corp., Bay-side, N. Y.

Sylvania Electric Products, Inc., five awards: Equipment Development Plant, Montoursville, Pa.; General Engineering Lighting Div., Salem, Mass.; Hillsboro, Mass., Plant; Lighting Div., Montoursville, Pa.; Lighting Div., Waldoboro, Maine.

Talon, Inc., Plant 1, Woodland, N. C.  
Tennessee Valley Authority, Colbert Steam Plant, Tusculumbia, Ala.

Texas Eastern Transmission Corp., two awards: Gas Pipeline Plant, Shreveport, La.; Production Div., Shreveport, La.

Texon, Inc., Russell, Mass., Plant.

Thomas A. Edison Industries, McGraw Edison Co., West Orange, N. J.

Toms River Corp., Cincinnati, Ohio, Chem. Works.

Union Carbide Corp., eight awards: Bakelite Co., Bloomfield, N. J.; Bakelite Co., Ottawa, Ill.; Bakelite Co., Wyandotte, Mich.; Development Laboratory, Fostoria, Ohio; Kemet Co., Cleveland, Ohio; Long Reach Plant, Sistersville, W. Va.; Republic Plant, Niagara Falls, N. Y.; Union Carbide Nuclear Co., Bishop, Calif.

U. S. Defense Corp., Weldon Spring, Mo., Ordnance Works.

U. S. Forest Service, Central States For. Exp. Sta., Columbus, Ohio.

United States Gypsum Co., six awards: Boston Plant, Charlestown, Mass.; Heath, Mont., Plant; Lisbon Falls, Maine, Plant; Oakmont, Pa., Plant; River Rouge, Mich., Plant; Sigurd, Utah, Plant.

United States Rubber Co., four awards: Burlington, N. C., Plant; Canadian Lastex, Ltd., Montreal, Que.; Gastonia,

Circle Item No. 66—Reader Service Card



MODEL #412

Adjustable Retractor Temples

## Featherlight TUC-AWAYS

A new thick plastic frame gives greater utility and longer life to TUC-AWAYS, the safety spectacle that's so light and comfortable that workers hardly know they're wearing them.

Interchangeable, optically correct EYE SAVERS Lenses are safe and shatter-proof. They snap-in and snap-out for easy lens replacement.

Plastic or Metal Retractor temples telescope in and out for perfect fit — can be adjusted by the wearer.

For details, see your authorized EYE SAVERS supplier or write direct.

**WATCHMOKET OPTICAL CO., INC.**  
232 West Exchange Street  
Providence 3, R. I.

Quality Eye Protective Equipment

Made by the Leaders in Plastics



## This is it! MAKE QUIET AREAS AT LOW COST with E. H. Noise Reduction Panels



Here is a real contribution to industry's need for low cost, sound-proof and sound absorptive noise barriers. Can be cut in the field to any size and shape! Complete with erection members, soundproof doors and bucks. Write today for complete literature to Dept. 10-59.

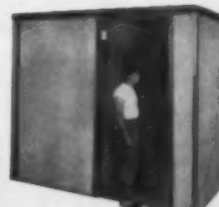
**ELOF HANSSON, INC.**

ALBANY DIVISION

E. H. Panels are 4 x 8' for easy building.

711 Third Avenue, New York 17, N. Y.

Enclose noisy machinery



Circle Item No. 67—Reader Service Card



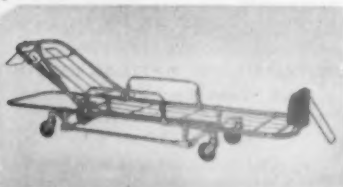
## WASHINGTON

finest quality COTS  
and STRETCHERS for  
emergency use

• Washington's complete line of ambulance cots, stretchers, cot fasteners and other emergency equipment has featured the finest craftsmanship and highest quality in the industry, for over 33 years! First aid and rescue squads, fire departments, factory hospitals and first aid rooms have always depended on Washington for their complete needs. Washington "safety engineered" equipment is fully guaranteed—gives you the best for the same price as ordinary equipment.



**MODEL 54-L ELEVATING COT**—A Washington exclusive design. Elevates to near hospital bed height, yet lowers to only 9½" high! A perfect cot for vehicles with limited head room and overhead hanging stretchers. Here's all the advantages of an elevating cot—plus extra head room when lowered.



**MODEL 21-L LOW COT**—Only 8¼" high! A really low cot for cars with less head room or with overhanging stretchers. Another Washington EXCLUSIVE design, to meet changing car conditions.



**MODEL 11 FOLDING STRETCHER**—Lightweight and rugged, folds to 3¼" high. Ideal when an extra stretcher is needed in a hurry!

See your jobber or  
write for FREE catalog.



**WASHINGTON**  
Products Company  
Washington Court House, Ohio  
Circle Item No. 68—Reader Service Card

N. C., Textile Plant; Santa Ana, Calif., Plant.

**U. S. Steel Corp.**, eight awards: Consolidated Western Steel Corp., Fresno, Calif.; Michigan Limestone Div., Conneaut, Ohio, Plant. Mich. Limestone & Chemical Co.: Kaylor Mine, East Brady, Pa.; Quarry, Cedarville, Mich.; Quarry, Hillsville, Pa. Tennessee Coal & Iron Div: Central Water Works, Fairfield, Ala.; Dolonah Quarry, Fairfield, Ala.; Fairfield, Ala.

**Universal Atlas Cement Co.**, Duluth, Minn.

**Universal Oil Products Co.**, Pilot Plant Div., Riverside, Ill.

**Van Dusen Harrington Co.**, St. Anthony, Minneapolis, Minn.

**Victor Chemical Works**, Silver Bow, Mont., Plant.

**Virginia Carolina Chemical Corp.**, three awards: Fertilizer Nichols, Fla., Plant; Portsmouth, Va., Plant; Wylam, Ala.

**Visking Corp.**, Home Office Div., Chicago, Ill.

**Volunteer Portland Cement Co.**, Knoxville, Tenn.

**Warneke Paper Box Co.**, Denver, Colo.

**Warner Co.**, Union Furnace Quarry, Tyrone, Pa.

**Western Electric Co., Inc.**, four awards: Distributing Houses: Portland, Oregon; Houston, Tex.; Indianapolis, Ind.; Seattle, Wash.

**Westinghouse Electric Corp.**, 14 awards: Augusta Maine Mfg. & Repair Plant; Apparatus Dept., Pittsburgh, Pa.; Appliance Div., Newark, Ohio; Atomic Fuel Dept., Cheswick, Pa.; Carrier Micro Wave Dept., Baltimore, Md.; Industrial Electronics Dept., Baltimore, Md. Mfg. & Repair: Fort Worth, Tex.; Indianapolis, Ind.; Los Angeles, Calif., 30th St., Philadelphia, Pa.; Seattle, Wash.; Springfield, Mass.; Syracuse, N. Y.; Ordnance Dept. Baltimore, Md.

**West Point Mfg. Co.**, Service Div., West Point, Ga.

**Weyerhaeuser Timber Co.**, Forestry, Tacoma, Wash.

**Wolverine Shoe & Tanning Corp.**, Rockford, Mich.

**Wyandotte Chemicals Corp.**, Wyandotte, Mich.

**Wyco Pipe Line Co.**, Pipe Line, Denver, Colo.

**Young Spring & Wire Corp.**, two awards: Extruded Mine Div., Ypsilanti, Mich.; Mattress, Corona, Calif., Plant.

**Youngstown Sheet & Tube Co.**, Hubbard Works, Youngstown, Ohio.

**Universal Atlas Cement Co.**, two awards: Hannibal, Mo., Plant; Northampton, Pa., Plant.

**Westinghouse Electric Corp.**, Lamp Div., Little Rock, Ark.

**West Point Mfg. Co.**, Lanett, Ala., Mill.

**Woodside Mills**, two awards: Easley, S. C., Plant; Haynsworth Plant, Anderson, S. C.

Sign on the back of a truck:  
"Crime doesn't pay. Neither does trucking."

## EYE WASHING FOUNTAIN



SAVE EYES!



Leading industrial doctors advise immediate washing with plenty of running water as the best first aid treatment for any chemical in the eyes. Records prove that washing with water for ten minutes or more, close to the accident, is necessary to reduce or eliminate eye damage.

Forehead operation leaves hands free to open eyelids so water can be directed wherever chemicals might be lodged. Sanitary white baked enamel bowl is resistant to most fumes.

Over 500 industrial plant installations have been made to date.

Write For Details.

VALVE  
Chain Operated  
Quick Action  
Self-Closing

## NEW EMERGENCY SHOWER



The B & A Shower is the quickest and most satisfactory way to saturate a worker with gallons of water the instant an accident occurs, to prevent a disfiguring burn—even a fatality.

Special shower head, no holes to clog—can be used where unfiltered water prevails.

Write For Details.

GLASS SLIVERS  
AND CHEMICAL  
IN EYES!

DISFIGURING  
FACIAL CUTS  
AND BURNS!

CUTS AND  
CHEMICAL BURNS  
ON ARMS  
AND BODY

THIS HAPPENS  
WHEN  
UNPROTECTED  
GLASS BOTTLES  
ARE DUMPED

NEW  
LOW COST  
B & A  
SAF-T-BAGS



5 PINT  
1 GALLON  
5 GALLON

are widely used for the safe handling of glass bottles containing harmful chemicals; also the storage and recovery of expensive serums, biologicals, and other costly products.

Painful cuts, disfiguring burns, loss of eyesight, or even a fatality, do result from corrosive liquid splash and flying glass when unprotected bottles shatter.

Write For Details.

**BENSON & ASSOCIATES, INC.**

P. O. Box 7542, Dept. N.S., Chicago 80, Ill.  
Circle Item No. 69—Reader Service Card



# 74% USE ONOX



*to prevent*  
**ATHLETE'S  
FOOT**

**74 of the 100 Largest  
Manufacturers Use  
ONOX®  
SKIN-TOUGHENER**

Modern research has upset old theories about Athlete's Foot control. Skin specialists have proved that the best way to prevent Athlete's Foot is to improve the skin's condition. *That's what ONOX does.* ONOX mineral salts toughen the skin and make it resistant to fungus growth.

- No Splash
- Odorless
- Easy to Maintain
- Relieves tired, aching feet

#### 60 DAY TRIAL OFFER

Order any amount of ONOX and Footmats. Pay nothing unless fully satisfied after 60 days' use.

## ONOX, INC.

125 SECOND STREET  
SAN FRANCISCO 5, CALIFORNIA  
Warehouses: BROOKLYN · CLEVELAND  
NEW ORLEANS · NEWARK, CALIF.

Circle Item No. 70—Reader Service Card  
National Safety News, September, 1958

### Off the Job

—From page 42

on a special questionnaire for industries.

As in past years, the Inventory will be administered through local and state Inventory Centers. Selection and establishment of these centers will be made by the Home Division of the National Safety Council. Generally in those cities having safety councils which are chapters of NSC, these councils will serve as Local Inventory Centers. In a few other selected cities, the local health department will assume this responsibility. On the state level, either the state department of safety, the state safety council, or the state health department will serve as the State Inventory Center.

In most cases, industries will be approached by local safety council staff members regarding participation in this year's Inventory. In cities having no safety councils, industries may be approached by representatives of the State Inventory Centers. Should your company fail to receive a questionnaire from one of these sources by December 1, and if you desire to cooperate in this year's Inventory, write to the Home Division, National Safety Council, Chicago 11, Illinois.

The success of the 1958 Home Inventory depends largely on the extent of participation by all organizations. Through their increased emphasis on off-the-job safety, industries are becoming a vital force in the reduction of home accidents. Won't you cooperate by sharing information regarding your successes—or failures—in this phase of your safety program?

### Powerful Helpers

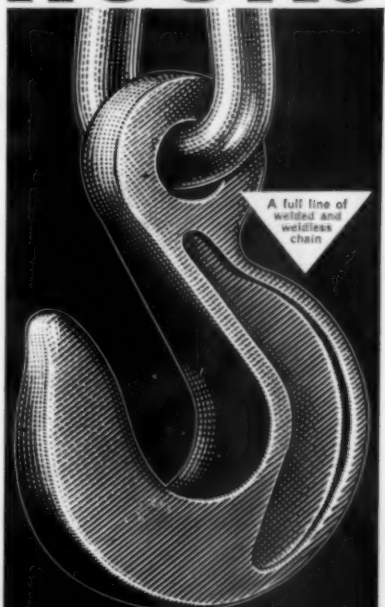
—From page 25

correct brushes, or worn bearings on the armature.

Experts say 75 per cent of portable electric tool failure can be traced to lack of attention to carbon brushes. These should also be inspected often, kept free from

PATENTED

# TAYCO HOOKS



another advantage of

**TM** factory-made  
**alloy sling chains!**

Pat. No. 2646306

Patented Tayco Hooks are the strongest on the market, for they are drop-forged from special alloy steel with exclusive I-Beam design! Uniform heat-treating, stress-free links, Taylor's quality control and Test Certificate on assembled sling are additional advantages of TM factory-made Alloy Slings. Call your distributor or send for Bulletin 13.

S. G. TAYLOR CHAIN CO., INC.  
Hammond, Indiana  
3505 Smallman St., Pittsburgh, Pa.

**Taylor  
Made  
CHAIN** SINCE 1873

Circle Item No. 71—Reader Service Card

dirt and dust, and should always operate freely in the brush holder without sticking.

Enough spring tension should be present to keep the brushes in firm contact with the commutator. In replacing worn brushes, be certain to install the correct brush for the tool. These are usually available at factory service branches.

Incidentally, the majority of portable electric tools are equipped with a safety release

type of switch to prevent accidental starting of the tool when the electric cord is plugged into the socket. Such switches should be checked carefully to make sure they actually do release, as the operator comes to expect this action. If the switch is faulty, accidents result.

Specific maintenance procedures, recommended by Black and Decker Manufacturing Company, pinpoint various "musts"

concerning such electric portable tools as the drill, sander, saw and hammer.

**Drills.** Check the chuck for worn or broken jaws. Regrease with special grade grease that doesn't decompose readily under heat and constant use. Clean air vents at top and bottom of the motor. Inspect the commutator for wear, and clean all dirt from the commutator housing.

Check the brushes for wear, and make sure they move freely in the brush holder. Check the brush springs, and make certain they have sufficient tension to keep the brushes in contact with the commutator. Check the switch, and replace, if necessary. Check the electric cord and cord clamp.

**Sanders.** Replace worn molded rubber pads. Worn pads cause vibration, and, if cracked, may fly apart, as these tools operate at 4,200 revolutions per minute. Repack the gear case with the proper grade of fresh grease. Replace worn bearings. Clean the commutator housing.

Replace worn brushes and brush springs with the proper type of brush or springs. Turn the commutator, if necessary, and undercut the mica. Check the cord and cord clamp. Check the switch.

**Saws.** Make sure sharp saw blades are always used—to avoid overloading of motor and gears. Replace grease or oil of the type recommended by the manufacturer. Check the saw guard, and make sure it operates perfectly. Replace worn bearings. Check the switch. Check brushes and brush springs, and replace, if worn. Turn the commutator and undercut the mica, if needed.

**Hammers.** Clean dust and other harmful materials from brush holders, commutator, and other surfaces of the hammer. Check regularly to see the screws on the hammer have not become loosened through use of the tool. Oil the hammer frequently—at least every three or four operating hours—using special oil. Switches will wear more often on this type of tool and should be checked and replaced, when needed.

Other portable electric tools which might have maintenance schedules along these lines in-

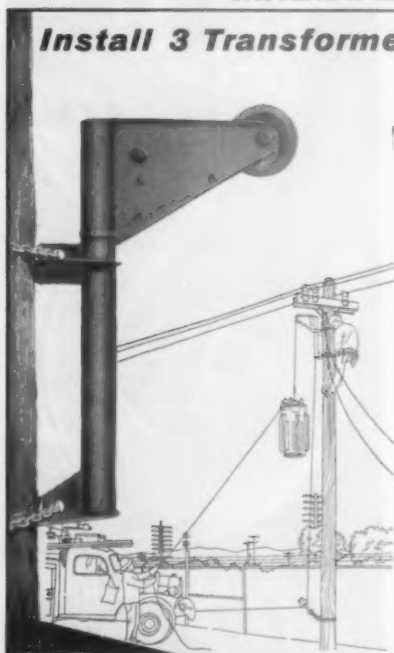
Circle Item No. 72—Reader Service Card

## Install 3 Transformers in 30 MINUTES

### with a MoPeCo TRANSFORMER HOIST

New MoPeCo Hoist now offers the fastest, safest, most efficient way to install transformers on pole or crossarm. Lightweight (42 lbs.) and portable, hoist has swivel head which permits multiple mounting in minutes. Tested at 3,000 pounds. Easily installed with standard pole chains. Dropped rear sheave prevents cable bind. Cable from truck winch raises transformers. No hazard to lineman. With one-position base mounting and wide range of swivel head, Colorado Central Power Co. now installs 3 transformers in only 30 minutes with MoPeCo!

Write or phone for Complete Details



**Mo Pe Co**

Pat. 2-2834

Dept. 11 **MORRISON-PELSUE CO.**  
2256 So. Delaware St. Denver 23, Colo.



**Weatherite**  
BAKED ENAMEL

**SIGNS**

STANDARD REGULATION  
SIGNS OF ALL KINDS FOR  
SAFETY AND EFFICIENCY



Write for Catalog

**PRAIRIE STATE PRODUCTS CO.** 3822 LAWRENCE AVE.  
CHICAGO 25, ILL.

Circle Item No. 73—Reader Service Card

clude polishers, vacuum cleaners, grinders, routers, shears, screwdrivers, tappers, valve refacers and many others.

And for each tool the role played by the electric cord is vital. Where an extension cable is necessary to reach a power outlet, be certain the cable is made of wire large enough to carry current to the tool without too great a drop in voltage, loss of power, and damage to the motor through overheating.

Also, the power line should be disconnected before accessories on a portable tool are changed. Cords on the floor create a hazard and should be suspended over aisles or work areas in such a way as not to be struck by other objects or by materials being handled or moved. An unexpected pull on the cord might cause the tool to jam or expose the operator to injury.

A tool should not be placed in an overhead location when there is a chance the cord will be pulled, making the tool fall. The cord and the tool may be suspended by counterweighted rope or spring to keep the cord out of the operator's way and also counterbalance some weight of the tool and cord.

Use only Underwriters' Laboratories-approved and inspected extension cord. Damaged cord and defective plugs and switches may be dangerous. Never hang an extension cord over nails or other sharp edges. Don't allow the cord to be kinked or left where some heavy object may run over it. Wire or insulation will be damaged.

Protect the cord against contact with oil, hot surfaces, and chemicals, which might damage the insulation. Do not patch a damaged cord with tape. Shorten the cord or get a new one! Store cord in a clean, dry place where it can lie loosely coiled.

Naturally, guards, protective sleeves over drill bits and similar parts, goggles, and other safety equipment is recommended, supplemented where needed by insulating platforms, rubber mats and gloves. And, it is suggested that portable electric tools not be used in the presence of flammable gases or vapors.

## Air Trapped in Hard Hat Saves Buried Worker

A metal safety helmet recently saved the life of Gaetano Suglia, sewer worker, in an unorthodox way.

He and another man were placing tile in a 14-foot-deep trench in Highland Park, Ill. Suddenly a half-ton of dirt buried them,

Suglia completely and the other man up to his neck.

Fortunately, the cave-in had pushed Suglia's helmet over his face, giving him an air pocket from which to breathe for several minutes, while rescuers dug to save him. He suffered only a fractured arm, cuts, and bruises. His friend was cut and bruised.

Circle Item No. 74—Reader Service Card

# SAFETY FACTS for Industry



**Safe-Hi**  
THE  
FIRST  
FULLY ADJUSTABLE  
BO'S'N'S  
SWING



**DON'T TRY THIS!**

**WORK FASTER**  
OPENS WORKING AREA—NO RISER STRAPS IN THE WAY...

**SAFER..**

MORE COMFORTABLE. 5,000 LB. TENSILE STRENGTH. NYLON WEBBING IN RISER. AND WAIST STRAPS... 3 INCH, 4-PLY COTTON WEBBING. BODY PAD... OPTIONAL WOOD SEAT. STRAPS ONTO BELT, CANNOT FALL OFF.

**SPREADER**  
CAT. NO. 182



Greater working convenience. Greater production. Do a Better Job—Faster!

**WOODEN SEAT**  
CAT. NO. 181



When ordering Bo's'n's Swing with wooden seat, order as follows: No. 180 with No. 181.

**ROSE MANUFACTURING CO.**  
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**Safe-Hi**  
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## MANY HUNDRED INDUSTRIAL Manufacturers Use This ALL PURPOSE PROTECTION

for respiratory emergencies

### STEPHENSON "MINUTEMAN" RESUSCITATOR

Especially designed in weight and size, for quick, easy application in cases of fume suffocation, gas poisoning, heart attacks, etc.

**NO INDUSTRIAL PLANT SHOULD BE WITHOUT THIS PROTECTION**

Write for FREE demonstration or pamphlet N-409



**INHALATOR ASPIRATOR RESUSCITATOR**  
(weighs only 30 pounds)



**STEPHENSON CORPORATION**  
NEW JERSEY

Circle Item No. 75—Reader Service Card



## national's fast, safe SS-25 for electrical cleaning



National's SS-25 is the safest, fastest solvent for cleaning and degreasing all electric and electronic equipment. SS-25 has no flash at the boiling point, and its low toxicity is 25 times safer than carbon tetrachloride. With a specific gravity of 1.03, SS-25 leaves no residue on drying. Your electrical equipment will have a longer, trouble-free life when cleaned with National's economical SS-25 Solvent Degreaser. SS-25 should be specified wherever a SAFE solvent degreaser is required.



## national

DISINFECTANT COMPANY  
2417 Commerce, Dallas  
906 S. Seventh, St. Louis

## Suggestion Contest

—From page 29

check the housekeeping there. Who is Mike, and did we have a report on his fall? I don't care whether Joe can spell 'aisles,' and I don't care whether his faith in the efficacy of exhortations at meetings is exaggerated. He still may be reacting to a real situation, and we may have to be grateful to him for calling it to our attention.

"As to our girl-hater, that is probably a crank note. Still, it's worth a check to see whether discipline in that shop is lax. I've known the time when a pretty girl *was* a hazard in a plant.

"Mr. Jaski has probably 'invented' some sort of fool-proof guard that has been in production for years. Just at a guess, I would say it's probably either a photoelectric cell gimmick or some variant on handcuff guards. But I don't play guesses. I'll talk to him, and I'll do it in the presence of

witnesses, and I'll have catalogues at hand so I can show him his 'invention', if it turns out to be an old idea. It's a hundred to one shot against his having anything usable, but that one chance is worth a look.

"Jay Danelson is wrong, of course, about the freedom of the good old days from accidents. But he isn't completely wrong about the modern tendency to destroy initiative by babying. That's a point to keep in mind in all our work."

I think the boys thought I was straining a point to find some sense in these letters. But I've been in this business long enough to know that really good ideas sometimes come in unpromising packages. Also I know enough about human relations to want to take some action that shows every suggestion offered is given serious consideration.

So, it was with some impatience that I looked up a few minutes later as Lee said, "Boss, Dan, listen to this."

## PUMPS most anything\* THAT POURS!



\*A few exceptions.  
Write for approved list.

Take the risk and waste out of liquid transfer! This rugged Tokheim Hand Pump, with alternate diaphragms, handles most anything from diesel oil to acetates—safely, quickly, without spillage. Eliminates fire hazards and accidents, aids good housekeeping. Accelerates production, too. Pumps 20 gallons per 100 strokes. Get list above from your Tokheim dealer, or write direct today.



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DESIGNERS AND BUILDERS OF SUPERIOR EQUIPMENT  
1670 Wabash Avenue SINCE 1901 Fort Wayne 1, Ind.

Subsidiaries: Tokheim N.V., Leiden, Holland—GenPro, Inc., Shelbyville, Ind.  
Factory Branch: 475 Ninth Street, San Francisco 3, California  
In Canada: Tokheim-Reader of Canada, Ltd., 205 Yonge St., Toronto, Ont.

Circle Item No. 76—Reader Service Card

Circle Item No. 77—Reader Service Card

National Safety News, September, 1958



"Another funny one?" I asked, sourly.

"I don't think so, boss." Lee replied. "This man has drawn a flow-of-material chart for Leder's shop that looks like a Chinese maze. I remember that main aisle crossing does have congestion, with fork lifts crossing a stream of hand truck traffic. Anyhow, he has another chart showing what the flow would be if they relocated one of the loading docks."

I looked at the entry—a pencilled note on lined paper, and two large charts, crudely but neatly drawn on what seemed to be sheets of wrapping paper. I spent five minutes trying to spot an obvious flaw in the offered solution.

"All right," I said. "I'll check this out on the spot at Leder's. Dan, you run down that Lachewski guy and see if he has a point. Lee, you find out who that 'Man Who Knows' is and check the situation there."

Lee groaned, "Boss, I still think that one is a crackpot."

"So do I," I said, "but I'm not sure. Check it."

## Wire from Washington

—From page 14

and enforce safety regulations governing the design and operation of civil aircraft.

The bill retains in the CAB the authority to investigate air accidents, and provides for special boards of inquiry to investigate major air accidents. (See "Wire," August 1958.) The Senate and House conferees agreed on a reconciliation of differences in the versions passed in the Senate and the House, which results in a bill substantially identical to the Senate version. As the Senate approved the conference reports, S. 3880 was called "essentially an Air Safety Bill."

A subcommittee of the House Government Operations Committee concluded hearings on the Federal Government's role in aviation, in which such safety aspects as air traffic control, cockpit visibility, and runway construction, among other matters, were discussed. Government agencies in

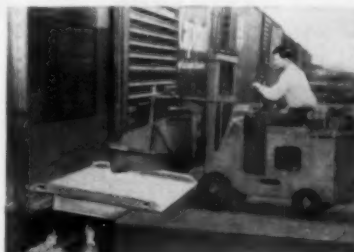
## Magcoa magnesium Dockboards



**Lightweight! no strains... no injured hands!**  
Lightweight magnesium (1/4 weight of steel) means one man, no strain lifting. Special recessed, Magcoa safety hand holds eliminate danger of crushed fingers or hands.



**No board slippage... no run-offs!** Special Magcoa locking leg prevents any Dockboard slippage. Safety curbs (now painted bright, safety yellow) prevent equipment run-off. And for complete safety, all Magcoa Dockboards are specifically engineered to fit your dock exactly.



## Safest to use!

### MAGNESIUM COMPANY OF AMERICA Materials Handling Div.



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Representatives in principal cities

☐ Please send special Dockboard File and news on new safety lock

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Company \_\_\_\_\_

Address \_\_\_\_\_

City-Zone-State \_\_\_\_\_

In Canada: Magcoa Limited, Toronto, Ontario.

Circle Item No. 79—Reader Service Card

# STOP SLIPS, FALLS

Trowel on. Dries quickly. Provides safe non-slip footing on all surfaces, wet or dry. Resists oil, chemicals, water and weather conditions. Adheres firmly to wood, concrete and metal. One gallon covers approximately 40 square feet.

## FERROX

Write for Free Ferroxx Bulletin.

AMERICAN ABRASIVE METALS COMPANY

AB 142 464 COIT STREET, IRVINGTON 11, NEW JERSEY

Circle Item No. 78—Reader Service Card

National Safety News, September, 1958

## THE POSITIVE LADDER SAFETY DEVICE



### CLIMBING MADE SAFE!

If climber starts to fall, device locks in a notch automatically, instantly. Holds securely. Limits fall to 7 inches.

### PREVENTS DEATH AND INJURIES — FROM FALLING

**AUTOMATIC, POSITIVE.** Will instantly catch and hold workman if he starts to fall, even if unconscious. Requires no attention from climber; he climbs in normal manner. Inexpensive. Easy to install; 3 men can clamp it to ordinary ladder in few hours. Clamps to any rung ladder, peg ladder, pole or framework. No welding or cutting. Notched rail hot-dipped galvanized. Entire equipment rust and corrosion proof. Can be kept free of ice by applying heat inside the carrier rail. In use approx. 10 years. Approved by Safety Engineers and Govt. Agencies throughout country. Patented. Manufactured only by

**SAFETY TOWER LADDER CO.**  
1024 Burbank Blvd., P.O. Box 1052  
BURBANK, CALIFORNIA

## HALCO STRETCHER CANISTER



The Halco Stretcher Canister is the ideal way to store your Stretcher. Made of heavy gauge steel, the Canister when closed will prevent dirt and grime from deteriorating the Stretcher. The Canister is 95" high by 5" wide by 8" deep, and comes finished in white baked enamel.

Write today for literature and the name and address of the nearest dealer handling the Halco Stretcher Canister.

**A. E. HALPERIN Co., Inc.**  
75-87 NORTHAMPTON ST.  
BOSTON 18, MASS.

"Your Safety—Our Business"

aviation testified as to their safety programs.

The Department of Defense disclosed the rate of military plane accidents is declining for the third straight year. In the first seven months of 1958, there were 1,204 accidents, compared with 1,302 in 1957 and 1,379 in 1956. For the same seven month period, there were 673 deaths in 1958, 642 in 1957, and 690 in 1956. (The figures cover all three services.)

**Marine Safety.** S. 3951, to authorize the Secretary of the Treasury to prescribe day signals for certain vessels, was approved by the Senate and the House and sent to the President for his approval. (See "Wire," August 1958.) S. 2115, providing for lights on vessels towing or being overtaken, was passed by the Senate and the House and sent to the President. H.R. 13,021 was passed by the House and also passed by the Senate in an amended form which deletes Advisory Committees. It amends the Longshoremen's and Harbor Worker's Compensation Act to provide a system of safety rules, regulations, and safety inspection and training for the longshore and ship-repair industry. (See "Wire," March and April 1958.) Enforcement powers are vested in the Secretary of Labor.

In the course of the House debate, reference was made to National Safety Council safety awards, and to the fact the present injury rate in this field is approximately seven times higher than that in manufacturing activities.

The House Committee which considered the legislation concluded previous legislation did not authorize the establishment of an effective safety program and "the activities of the Federal and State Governments, in fostering safety, have not prompted the adoption of measures to improve safety conditions in longshore and related employment."

The House passed H.R. 11,078, the boat safety act (See "Wire," March, May, June, 1958.) The bill would require the numbering, for identification, of all motor boats with more than 7½ hp., in-

cluding outboards under 16 feet, providing certain exemptions for public vessels. It would require assistance in the event of an accident, and reporting of the accident.

Civil penalties are legislated against reckless or negligent operation. The bill would become effective on April 1, 1960. Its sponsors regard the legislation primarily as an enabling act to encourage states to adopt uniform small-boat safety measures, by providing concurrent jurisdiction so states which have adopted their own laws have the right to enforce their laws on all waters whether State or Federal.

The bill was also favorably reported out after an informal hearing.

**School Safety.** S. 4145 was introduced to make grants to states for assistance in extending and improving their fitness programs through health and safety education, physical education and recreation instruction.



For  
Safety  
**Guardi-Ann  
Hat**  
U.S. PATENT NO. 2,800,000

Combines utmost protection and style. Exclusive patented features found in no other hat.

**Write for Free Sample  
or Order Direct from us**

**\$15.00 dz.**

**CHIC MAID HAT MFG. CO., Inc.**  
630 HIGH STREET  
BUFFALO 11, N. Y.



- Reduce traffic accidents at blind corners inside and outside your plant—also at loading platforms.

### Heavy Gauge STEEL BRACKET

(Furnished only on the 36" diameter mirror)

- Utility design
- Enables Optional installation on counters, posts, walls, ceilings, etc.
- Adjustable to height and position
- Easily installed in minutes



Traffic Safety Mirrors are available in Convex or Flat glass. All have a Yellow and Black Safety Stripes Border.

Round Convex Mirror Sizes  
13" • 18" • 24" • 36"  
Flat Rectangle Mirror Sizes  
6"x14" 14"x18"  
other special sizes to order  
(Available in Unbreakable Metal Mirrors)

**FRED SILVER & Company**  
Mfgs. of Specialty Mirrors for Industrial Use  
92 Lock Street Newark 3, N. J.

**AT LAST!**

**RELIEF**  
from  
**ATHLETE'S FOOT**  
**IN SHOWER ROOMS**  
or you pay nothing

**Outmodes poisonous foot baths that make feet sore**

**A MORALE BUILDER**

**BATHERS PREFER IT!**

**TRY IT—NO OBLIGATION TO BUY IT!**

costs less than  
**50¢**  
a man year

**NEW**  
refreshing  
non-poisonous  
**FUNGICIDE**  
write  
**FOAM-X COMPANY**  
Santa Barbara, Calif.

EASTERN SHIPPING DEPOT HUNTINGTON, IND.

Circle Item No. 84—Reader Service Card

National Safety News, September, 1958

## The Safety Library

—From page 54

The American Journal of Nursing, 2 Park Ave., New York 16.

Aviation Age, Conover-Mast Publications, 205 E. 42nd St., New York 17.

Aviation Week, McGraw-Hill Co., 330 W. 42nd St., New York 36.

Bulletin of the American College of Surgeons, 40 E. Erie St., Chicago 11.

Business/Commercial Aviation, 205 E. 42nd St., New York 17.

Coal Age, McGraw-Hill Publishing Co., 330 W. 42nd St., New York 36.

Engineering News-Record, McGraw-Hill Publishing Co., 330 W. 42nd St., New York 36.

Factory Management and Maintenance, McGraw-Hill Co., 330 W. 42nd St., New York 36.

Fire Engineering, Case-Shepherd-Mann Dept., 305 E. 45th St., New York.

Hospital Management, Washington Bureau, 1319 F St., N. W., Washington 4, D. C.

Industrial and Engineering Chemistry, American Chemical Society, 1155 Sixteenth St., N. W., Washington 6, D. C.

Industrial Medicine and Surgery, 605 N. Michigan Ave., Chicago 11.

Industrial Nurses Journal, American Association of Industrial Nurses, Inc., 170 E. 61st St., New York 21.

Loss Control, American Mutual Liability Insurance Co., 142 Berkeley St., Boston 16, Mass.

The Magazine of Standards, American Standards Association, Inc., 70 E. 45th St., New York 17, N. Y.

Modern Railroads, Watson Publications, Inc., 201 N. Wells St., Chicago 6.

Monitor, The Industrial Commission, Division of Safety and Hygiene, Ohio Department Bldg., Columbus 15, Ohio.

Monthly Labor Review, Superintendent of Documents, Washington 25, D. C.

Pacific Factory, 709 Mission St., San Francisco, Calif.

Petroleum Week, McGraw-Hill Publishing Co., 330 W. 42nd St., New York.

Pit and Quarry Publications, 431 S. Dearborn St., Chicago 5.

The Plant, Plant Publishing Co., St. Joseph, Mich.

Printing Magazine, Walden, Sons & Mott, Inc., 466 Kinderkamack Road, Oradell, N. J.

Pulp and Paper, Miller Freeman Publications, 400 W. Madison St., Chicago 6.

Refrigeration, John W. Yopp Publications, Inc., 1070 Spring St., N. W., Atlanta, Ga.

Southern Pulp and Paper Manufacturer, 75 Third St., N. W., Atlanta 8, Ga.

Textile World, McGraw-Hill Co., 330 W. 42nd St., New York 36.

U. S. Armed Forces, Medical Journal, Superintendent of Documents, Washington 25, D. C.



## THE SENTINEL

Newest fully automatic stand-by lighting unit for emergency use when power fails.



Model No. 622

- ★ Tested and approved by Underwriters Lab.
- ★ Provides 8 to 10 hours of steady illumination.

### INSTANTLY and AUTOMATICALLY

- turns on, when power failures occur.
- ★ Automatically re-charges batteries and maintains proper charge level.

Weight 31 lbs. with batteries—Five year guarantee—6½" Dia. Heads.

**The Portable Light Co., Inc.**

216 WILLIAM ST., NEW YORK 38, N. Y.

Write for FREE Literature—Dept. 70

**SOLDER**  
WITH  
**SAFETY**  
AND  
**PEED**

**USE**

**WILDER**

**ADJUSTABLE SOLDERING IRON HOLDERS**

Three sizes for large and small irons. Can be placed on top of bench, fastened under bench or clamped to bench top or shelf. Available with wiping pad attachment, also slide for fastening small holder to large.

Write for further information.  
**WILDER MFG. CO., INC.**  
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MECHANIC ST. & ERIE R.R. PORT JERVIS, N.Y.

Circle Item No. 85—Reader Service Card

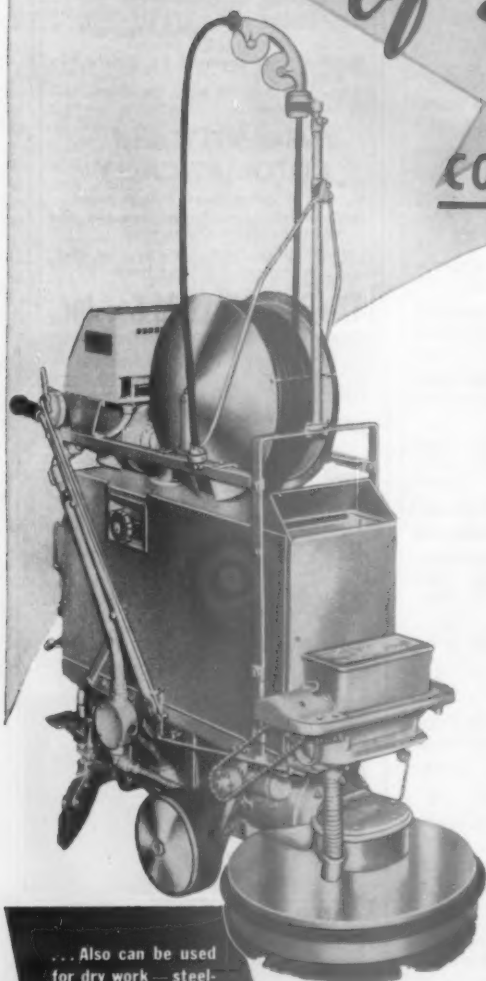


SMALL-AREA BUILDINGS...

Save  $\frac{2}{3}$  of Every Hour  
of Scrubbing Time

WITH A

**COMBINATION SCRUBBER-VAC!**



... Also can be used  
for dry work — steel-  
wooling, et cetera

(Powder Dispenser  
is an accessory)

Today, even buildings with but 2,000 to 15,000 sq. ft. of floor space can reap the labor-saving, cost-reducing benefits of *combination-machine-scrubbing*. Here's a *Combination Scrubber-Vac*, Finnell's 418P at left, that's specially designed for such buildings. This *electric* unit, with its 18-inch brush spread, cleans floors in *approximately one-third the time* required with a conventional 18-inch machine and separate vac.

The 418P applies the cleanser, scrubs, and picks up (damp-dries the floor)—*all in one operation!* Maintenance men like the convenience of working with this single unit... the thoroughness with which it cleans... and the features that make the machine simple to operate. It's *self-propelled*, and has a *positive* clutch. There are no switches to set for *fast* or *slow*—slight pressure of the hand on clutch lever adjusts speed to desired rate. The powerful vac performs quietly. Compactly built, the 418P also serves advantageously in larger buildings for the care of floors in narrow aisles and congested areas, and is available on lease or purchase plan.

Finnell makes *Scrubber-Vac Machines* for small, vast, and intermediate operations, and in *gasoline* or *propane* powered as well as *electric* models. From this complete line, you can choose the size and model that's exactly right for *your* job (no need to *over-buy* or *under-buy*). It's also good to know that a *Finnell Floor Specialist and Engineer* is nearby to help train your maintenance operators in the proper use of the machine and to make periodic check-ups. For demonstration, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 2209 East Street, Elkhart, Indiana. Branch Offices in all principal cities of the United States and Canada.

**FINNELL SYSTEM, INC.**

*Originators of Power Scrubbing and Polishing Machines*



BRANCHES  
IN ALL  
PRINCIPAL  
CITIES



# New SAFETY EQUIPMENT

Product announcements in this section are reviewed for compliance with the advertising policy of the NATIONAL SAFETY NEWS. Inclusion should not, however, be construed as endorsement or approval by the National Safety Council.



## Fire Extinguisher Recharge Adapter

Charging of pressurized dry chemical portable fire extinguishers in the field when 250 psi air is not

readily available is easily accomplished with a new adapter.

The units are easily recharged with carbon dioxide. The horn-hose assembly is unscrewed and the recharge adapter is screwed in. The extinguisher is laid on its side on a horizontal flat surface with the pressure gauge on top. The screw in the carbon dioxide recharge cartridge is started, the trigger is pulled, and the screw is continued in the recharge cartridge until carbon dioxide begins to discharge from the cartridge into the portable. The pressure gauge is checked, the trigger is released, and the recharge cartridge is unscrewed simultaneously when the gauge reads 180 psi for a 20-pound pressurized chemical portable and 180-225 psi for a 30-pound pressurized dry chemical portable. The adapter is removed and the horn-hose assembly is screwed into position. The portables are UL- and FM-approved.

Walter Kidde & Co., Inc., 675 Main St., Belleville 9, N. J. (Item 301)



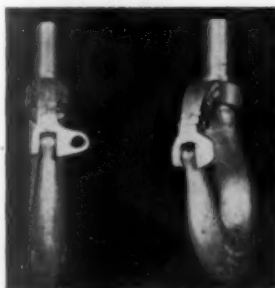
## Invalid Chair

This new aircraft invalid chair can be taken directly into the plane aisle, and the passenger stays in the chair from the waiting room to his seat on the plane. It is lightweight and maneuverable and eliminates hazardous transfers of passengers and inconvenience to the carrier and attendants.

The all-aluminum unit is ruggedly constructed and will safely carry passengers of any size or weight. The chair was especially designed and manufactured for aircraft use.

The chair is 52-in. high and 14½-in. wide with an over-all length of 29½-in. The unit has chrome rubber-tired wheels, and a slate green waterproof pad.

Washington Products Co., 238 S. Fayette St., Washington C. H., Ohio (Item 302)



## Safety Hoist Hook

A new locking mechanism for these safety hoist hook gates has been developed for use on large size hoist hooks. The mechanism

locks the safety gate in place over the tip of the hook creating greater strength to the gate. On large-size hoist and crane hooks, wire rope slings or lifting eyes generally used create side pressure. The new "Tip-Lok" attachment on the hook gate keeps the gate closed and load secure. The larger the hook, the greater the leverage against the locking mechanism at the shank. To assure the necessary strength, the mechanism has been added to safety gates on several hook sizes.

The "Tip-Lok" automatically lifts open and drops closed upon contact with the tip of the hook. The locking tip of the gate is available with or without the ring, as shown in the photos. The ring on the "Tip-Lok" makes it possible for remote operation when the hook is used over intense heat or chemicals. The gate may be opened with a reach rod. The gate and locking mechanism are made of cast brass and all return springs are made of stainless steel.

E. D. Bullard Co., 2680 Bridgeway, Sausalito, Calif. (Item 303)

For More Information—Circle Item Number on Reader Service Postcard



### Non-Slip Floor Covering

"Scotch-Tred" is a resilient floor covering with a non-slip surface. The material is

flexible enough to be bent double, yet so durable that in laboratory wear tests it consistently outwears most popular floor coverings.

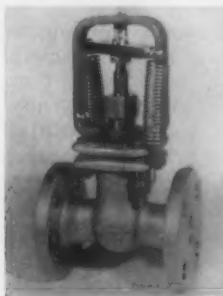
Wherever people are in danger of slipping and falling—walks, stairs and ladders, halls and corridors, locker rooms, and maintenance areas, "Scotch-Tred" can be applied in minutes and is ready for immediate use. The protective backliner is stripped from the pressure-sensitive adhesive and the product is pressed to a clean, dry surface.

It is made with a dimensionally stable plastic film backing, a water-proof adhesive and a bonded-particle surface. It is non-sparking, non-abrasive, and resistant to oils, chemicals, solvents, and many acids.

Primarily intended as a floor covering offering a safe, non-slip surface, "Scotch-Tred" has found application in many unrelated areas. Handles of tools can be wrapped with it to provide a sure grip; conveyor belts are stripped crosswise with it to provide additional non-marring traction and it is usable as pulley lagging due to its traction and flexibility.

The covering is available in beige, black, and gray and is sold in rolls, strips, and tiles.

**Minnesota Mining & Mfg. Co., 900 Bush St., St. Paul 6, Minn. (Item 304)**



### Fire Protection Gate Valve Guards

New fire protection cut-off valves handle a wide range of corrosive flammables. Requiring neither a complex system of counterweights nor interior bellows, the stainless

steel valve is essentially a modified bolted bonnet gate valve held open against two exterior springs by a small fusible link. These springs snap the valve shut when the fusible link reaches a melting temperature of 160 F, preventing the flow of liquid to fire areas.

The valves can be used in lines below storage tanks containing such combustibles as ethyl mercaptan, ethyl alcohol, methanol, acrylonitrile, and methyl ethyl ketone. Made of 316 stainless to resist both interior and exterior corrosion, they can be used at pumping pressures up to 150 psi.

Virtually nothing can go wrong with the valve internally where there are no moving parts and the protective feature consists of only two gate discs. Because of its compact size and lack of counterweights, space and position is not a limiting factor.

The cut-off valve has a wide range of potential applications throughout the petroleum and pharmaceutical as well as the chemical processing and allied industries in which flammable liquids are handled. Special design features are the rotating double disc assembly which maintains a tight seal even when the valve body distorts because of heat and a retained bonnet gasket for higher, more uniform loading and a one-piece stem and disc carrier assuring foolproof operation with the simplest design.

**Cooper Alloy Corp., Hillside, N. J. (Item 305)**



### First Aid Kits

Two new wall-mounted first aid kits are designed for smaller industrial plants.

The kits are made of heavy gauge steel and contain only the most important surgical dressings and medications. They are easily mounted on any wall but also are equipped with a carrying handle so they can be moved from the permanent location when needed.

**A. E. Halperin Co., Inc., 75-87 Northampton St., Boston, Mass. (Item 306)**



### Gas Mask Canister

The gas mask canister on the left, with a mechanical timer to indicate time it has

been in use, is now outmoded, according to The Gas Masks and Hose Masks group of the Industrial Safety Equipment Association, Inc., which has announced a new device to give visual warning that a canister is no longer effective against carbon monoxide. The new device (at right) consists of a window indicator divided into two parts. One side has an indicating color, the other a reference color. When the two colors match, the service life of the canister is spent.

This all-service gas mask with the "window-cater" canister has U. S. Bureau of Mines approval. Accompanying the new warning device is a new external check valve which prevents exhaled air from entering the canister and provides an effective seal against entry of moisture into the top of the canister during use or storage, and it guards the canister against moisture penetration when the facepiece and tube are being cleaned. The external check valve closes automatically after inhalation regardless of the position of the canister.

For More Information—Circle Item Number on Reader Service Postcard

The new window canister is an improvement over the former method of mechanical timing because mechanical timing only reflects actual time the mask is in use and fails to account for the time used up through moisture entry during long storage periods. Also, the new warning device works automatically, eliminating the possibility of human error.

Conversion kits for attaching the new improvements to older type masks are available.

**Mine Safety Appliances Co., 201 N. Braddock Ave., Pittsburgh 8, Pa. (Item 307)**



### **Safety Goggles**

These goggles have a light, comfortable frame made of Tenite polyethylene and wide lenses that permit comparatively unobstructed vision. Including a contoured nosepiece, the one-piece frame extends protectively over the temples. Relatively soft against skin surfaces, the polyethylene also has strength and resilience to withstand hard knocks.

An adjustable headband holds the goggles in place. Lenses snap into the frame and can be removed easily, when necessary, for replacement.

**Bausch & Lomb Optical Co., 635 St. Paul St., Rochester 2, N. Y. (Item 308)**



### **Drum Agitator**

Safe, air-driven drum agitators designed for use in hazardous atmospheres where explosive mixtures are being used, are portable and can be used on standard 55-gallon drums when agitation of explosive liquids prohibits the use of electrical equipment. The agitator can be operated by existing compressed air systems in most plants.

Two motor sizes are available to meet a wide range of mixing requirements. Model C, for light and medium viscosity liquids, is rated  $\frac{1}{4}$ - $\frac{1}{2}$  h.p., and Model D, for higher viscosity fluids, is rated  $\frac{1}{2}$ -1 $\frac{1}{4}$  h.p. Mixing speeds vary from 500 to 2000 r.p.m., depending on the air pressure used.

Mounting on any 55-gallon drum is quick and easy. The specially designed paddle shaft is slipped through the drum bung into the mixture and the agitator cage is screwed into the bung. Connection of the air line to the motor completes the installation.

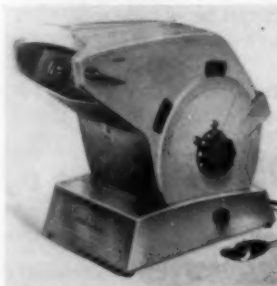
Standard mixing shaft and paddles of carbon steel meet most applications. For corrosive fluids, stainless steel shaft and paddles are available at extra cost.

**Prencce Products, Inc., 507 E. 10 Mile Road, Hazel Park, Mich. (Item 309)**

### **Protective Clothing Fabric**

A lightweight material for protective clothing that has superior resistance to chemicals and solvents at high temperatures is a "Fairprene" coated fabric made of Dacron polyester fiber coated with "Viton" synthetic rubber. It will withstand long exposure to temperatures as high as 300 F and is resistant to acids, alkalies, solvents, oils, lubricants, fuels, ozone, and weathering. The fabric is supplied to the clothing manufacturer in an uncured and unvulcanized state. This permits the manufacturer to seal the seams dielectrically in the uncured state and then vulcanize or cure the entire garment. This eliminates the need for sealing seams with adhesives or cements that might be affected by solvents. These protective properties are combined with extremely light weight. The material is .008-inch thick, and weighs only nine ounces per square yard.

**E. I. DuPont de Nemours & Co., Fabrics Div., Wilmington, Del. (Item 310)**



### **Vision Tester**

This vision tester measures visual skills and quickly identifies individuals requiring eye correction. It is designed for use by industrial and commercial plants, schools, and military.

The tester is a compact, lightweight precision instrument that measures important functions of vision with simplicity and speed.

Any number and variety of test slides, up to 12, can be mounted on the single drum for either "far" or "near" visual performance testing. The test slides can be positioned instantly and precisely by rotating the drum electrically with the press of a button, or manually by twisting a knob.

The slides can be interchanged easily and are protected by glass for permanence and ease of cleaning.

The tester is easily transported and its height is readily adjusted to any eye level simply by moving the eyepiece up or down. Right or left eye occlusion is at the touch of a button.

The basic instrument comes in two models—the pushbutton model with electric control, and the manually-controlled instrument.

**Titmus Optical Co., Box 191, Petersburg, Va. (Item 311)**

For More Information—Circle Item Number on Reader Service Postcard

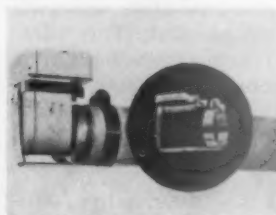


### Safety Shoe

A vinyl aluminum heat-resistant top coating covering the welt has been added to the moulder's nullifier safety shoe.

The shoe has been tested successfully in steel mills and the welt protection increases wearability and long life of the shoe. It wards off sparks more effectively and protects the welt due to its added heat resistance.

**Hy-Test Safety Shoes Div., International Shoe Co., 1509 Washington Ave., St. Louis 3, Mo. (Item 312)**



### Fluorescent Tube Guard

This guard is designed for the new slimline fluorescent tubes. The

guard will reduce the number of injuries from falling tubes and damage to material, machinery, merchandise, and food mixes. It can be installed quickly and permanently with a screwdriver and will last for the life of the fixture.

The treated resilient steel makes it possible for the guards to be sprung aside for relamping and cleaning.

**Den-El Equipment Co., 21 Spruce St., New York 38, N. Y. (Item 313)**



### Emergency Outdoor Light

This unit is completely waterproofed and designed specifically

for outdoor use but will also find many indoor applications in areas containing corrosive gases, chemicals, high moisture content, and dust, which would foul the mechanism of ordinary units.

The unit operates from regular 115-volt AC circuits and provides emergency lighting instantly and automatically whenever the regular source of power fails. All electrical components are hermetically sealed and the case has rubber gaskets throughout.

The two-rate charger (trickle and high) is completely automatic and requires no manually-operated switches or timers for correct battery maintenance. The battery is 6-volt 105 A.H. capacity, glass jar with visible hydrometer balls. Nickel cadmium or lead calcium batteries are also available.

For More Information—Circle Item Number on Reader Service Postcard

The unit has sufficient capacity to mount up to five sealed beam heads which can be placed remotely from the unit and connected to a wiring block within the unit.

**Electric Cord Co., 21 Spruce St., New York 38, N. Y. (Item 314)**



### Router Guard

A router guard that reduces "break-outs" on holing operations, as well as provid-

ing safety to the operator on all router operations, is now available.

The guard is cast of high tensile mechanite and machined to allow easy sliding over work surfaces. The guard also features set screw positioning for depth cutting. The router bit is covered during the complete cycle and the tendency of the work to "crawl" up the router bit is eliminated, giving the operator more protection yet retaining full visibility in the cutting areas.

The guard not only provides safety for the operator but at the same time provides a considerable material saving on holing operations as well as uniform depth routing even on warped material.

**Grand Woodworking Co., 1109 Seminary, Rockford, Ill. (Item 315)**



### Stainless Steel Sterilizer

Deluxe Model No. 5 Sterilizer washes, rinses, sterilizes, deodorizes, and preheats. This is all done easily and simply by foot pedals. Model 5 is in compliance with san-

itary construction requirements (Item 12, Bul. 37—Ordinance and Code regulating Eating and Drinking Establishments) of the U. S. Public Health Service and its Interstate Quarantine Regulations.

It can be used wherever refuse cans, mixing kettles, stock pots, milk cans, large kitchen utensils, and insulated containers need cleaning and sterilizing to preserve sanitary conditions.

The unit will operate under any one of several setups such as cold water and steam, cold water plus hot water and steam, cold water and hot water, hot water only, and steam only.

**Vacuum Can Co., 19 S. Heyne Ave., Chicago 12, Ill. (Item 316)**





### **Injury Moulages**

These moulages create the illusion of a real injury and vitally aid in the first-aid training of personnel.

Bleeding injuries frequently produce shock reactions which detract from calm and efficient administration of first aid. It is essential that such injuries be simulated realistically enough to produce similar reactions in the trainee. The realism of these bleeding-injury moulages can accomplish this.

Appearance of real injury is due to faithful reproduction of the wound in form and color and to apparently real blood spurting from severed arteries. The synthetic nature of the injury is concealed by blending the moulage into the wearer's clothing and by hiding mechanical elements of the system. Close examination of the injury will show it is artificial, but trainees will have been subjected to the desired emotional impact.

Moulages realistically portray such injuries as compound fractures of limbs, gun-shot and shrapnel wounds, bleeding wounds, atomic burns, and hypodermic insertion. Industry will find moulages effective in training first aid personnel in treatment of industrial accidents. All moulages have integral vinyl straps for attachment to the wearer's body. A multiple snap-fastener system provides secure fitting over wide ranges of wearer sizes. Hand moulages are exceptions; they are not recommended for use on large hands.

**Alderson Research Laboratories, 327 East 102nd St., New York 29, N. Y. (Item 317)**

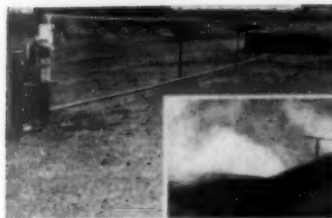


### **Utility Goggle**

The Econolite utility goggle eye cups are of injection-molded plastic, shaped to the facial contour. Integral deflecting louvers provide ventilation and keep out splash and flying particles. Welding models are equipped with vents to protect the eyes from injurious flash rays.

The lenses are standard 50 mm size, easily replaceable and available in a full range of colors and types. The eye cups are joined by a plastic-covered, adjustable, flexible ball-and-chain nose bridge. A quick-adjusting, elastic head band is provided for comfort and security. The goggle is available in three types, for grinding and chipping, acid handling, and welding.

**Dockson Corp., 3839 Wabash Avenue, Detroit 8, Mich. (Item 318)**



### **Storage Tank Fire Protection**

Storage and dip tank operations are high-potential fire hazards. Even

though kept at a safe distance from other flammable material, storage and dip tanks often present unique protection problems. A no-smoking rule in the area is standard precaution but to guard against the unexpected is a compact, low-cost automatic dry chemical fire extinguisher. If fire should occur, a fusible metal link melts (see inset) and actuates the extinguisher. This is one of the company's newest extinguishers for on-the-spot hazard protection. Two tank side nozzles, not more than 50 feet from the extinguisher, will expel 30 pounds of dry chemical, enough to protect a 40 sq. ft. area.

**Ansul Chemical Co., Marinette, Wis. (Item 319)**



### **Coated Fabric Gloves**

The Granflex line of work gloves offers a new concept in coated fabric gloves. The complete line of soft interlock gloves affords maximum finger dexterity

and resistance to abrasion, snagging, oil, and solvents. The gloves are comfortable and offer a high degree of hand protection.

**Granet Corp., 19 Loring Drive, Farmingham, Mass. (Item 320)**

### **Non-Skid Floor Finish**

This safety floor finish is a colored, paint-like material with an abrasive grit. It provides a durable, slip-resisting surface under especially difficult situations.

It is designed for use with various surface conditions, including dry or wet and is unaffected by oil. It is easily applied by brush or trowel to metal, wood, and concrete floors. The finish which dries in about six hours, may be cleaned with ordinary household detergents. The high wear-resisting quality is such that slip-proofing is maintained even after extended use.

The coating is useful for stairways, ramps, boat decks, and walk-ways, especially around industrial machinery, and meets Federal Specification Mil-C-5044.

**Lewbill Industries, Inc., 2002 Clark Bldg, Pittsburgh 22, Pa. (Item 321)**

For More Information—Circle Item Number on Reader Service Postcard



### Heat Reflective Clothing

Asbestos fabric, "Silvabestos," features greater wear resistance. It is said to wear 168 per cent longer than

clothing made of regular asbestos fabric. A protective coating provides greater protection against splash and heat transmission and reflects 40 per cent of the radiant heat. "Silvabestos" is lighter in weight than regular asbestos, increasing worker comfort and efficiency.

The complete line of clothing consists of gloves and mittens, sleeves, coats, pants, hoods, coveralls and overalls, cape sleeves, bibs and aprons, leggings and spats. Gloves and mittens have wool liners for added insulation.

This clothing is recommended for open hearth operations, heat treating and similar exposures. The garment should not be used in contact with open flame.

**American Optical, Safety Products Div., Southbridge, Mass. (Item 322)**



### Oil Absorbent

This manufacturer's oil-and-grease absorbent is now packaged in 25-pound bags for greater ease in handling.

The smaller package is said to minimize waste in pouring and distributing the contents.

The absorbent—Hi-Dri—can be used in any plant, mill, shop, factory, or warehouse where oily or greasy floors are a problem. Hi-Dri picks up spilled water, acids, chemicals, and other types of liquids in addition to oil and grease. It is especially helpful in hazardous locations as the material is fire-resistant even when scattered on an oil-soaked floor. The product offers protection against slipping on most types of floors and is harmless to the skin.

**Waverly Petroleum Prod., Inc., 1724 Chestnut St., Philadelphia 3, Pa. (Item 323)**

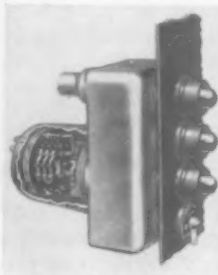


### Safety Spectacles

No. 7000 Series, a new family of plastic frame, square eye lens flash, and grinding safety spectacles are designed for strength and heavy duty to assure maximum protection against frontal hazards and, where side shields are provided, to deflect hazardous flying particles.

The series is available in three styles: Type F-7048-2, with green lens and side shields for flash-protection; Type 7048-1, with clear lens and side shields for chipping and grinding; and Type 7048, with clear lens and no side shields for normal frontal hazards. All are available with choice of spatula or cable temples; eye sizes 44, 46 and 48 mm; and bridge sizes 20, 22, 24, and 26.

**Glendale Optical Co., Inc., 600 W. Merrick Road, Valley Stream, L. I., N. Y. (Item 324)**



### Visularm Condulets

A high-speed flasher on the alarm light of these condulets attracts the operator's attention and provides at-a-glance indication of operating conditions. An independent

circuit can actuate a horn, siren, or bell, if an audible signal is also desired. A reset switch silences the horn or bell and changes the alarm light from flashing to steady until the fault is corrected. Visularm Condulets can be used to indicate normal and abnormal temperatures, pressures, liquid level, speed, load, or any other conditions.

Two models are available: Type EKP Visularm is explosion-proof, designed for use in chemical process industries, oil refineries, and similar hazardous locations; Type KP is both dust-ignition-proof and weather-resistant for use in grain handling and food processing plants, boiler rooms, and many other indoor and outdoor locations.

Factory-wired interior assemblies are interchangeable, so spares can be stocked to fit both Model EKP and Model KP in plants where both are used.

**Crouse-Hinds Co., Wolf & 7th St., Syracuse 1, N. Y. (Item 325)**



### Cable Holder

A device for holding welding cable or gas hose, especially when working above the level of the power source, as in the erection of structural steel, is called the "Cablehitch."

The device cuts down the welder's fatigue and promotes his safety and efficiency. It also saves wear on the cable and the cable connections.

Hooked to a support near the work area, the "Cablehitch" allows the cable to be pulled through, but prevents it from slipping back, thus freeing the worker from the weight of the cable leading down to the machine.

**Jackson Products, Air Reduction Sales Co., 31739 Mound Road, Warren, Mich. (Item 326)**

For More Information—Circle Item Number on Reader Service Postcard

## NEWS ITEMS

### Mathias Klein & Sons



M. A. Klein

M. A. Klein, Jr.

R. T. Klein

Mathias A. Klein, president and treasurer of the Chicago firm, has announced the election of Mathias A. Klein, Jr., as vice-president and Richard T. Klein as secretary of the company. Mathias Klein & Sons, in its 101st year, is under management of the third and fourth generations of the Klein family.

\* \* \*

### Randolph Laboratories, Inc.

This Northbrook, Ill., fire equipment manufacturer is the most recent manufacturer of fire fighting equipment to become a member of the Fire Equipment Manufacturers' Association. Stewart Boal, president, is the official representative in this national association of companies which make and market portable fire extinguishers and related equipment.

\* \* \*



J. A. Wagg

### Aluminum Safety Products, Inc.

John (Jack) A. Wagg has been appointed Product Sales Manager for the Aldek line of aluminum scaffolds, stages and other products manufactured by this New York City company.

Mr. Wagg will be responsible for and direct the national sales organization, program development, and selection of New York distributors.

\* \* \*

### Notifier Corp.

This fire alarm and sprinkler supervisory equipment manufacturer has announced an expansion program. The program includes construction of a new modern factory in Lincoln, Neb., as well as several personnel changes and additions. Among them are appointment of Don Nielsen as Manager of the Sales Engineering Department; Kermit Ackman, Factory Superintendent; and Claude Tetherow, vice-president and chief engineer.

\* \* \*

### Standard Industrial Products Co.

The manufacturer of the Sipco dunking station line of safe smokers is moving into a new plant at 3527 Farmington Road, Peoria, Ill. This plant, located in a rapidly expanding new industrial section, approximately triples the floor space of the old plant and leaves room for future expansion.

\* \* \*

### Acme Safety Products Co.



Norman Eberlein

Norman Eberlein is the new manager of the Toledo branch of Acme Safety Products. He has held executive sales positions in the automotive and petroleum markets for the past several years. He replaces Mr. Walter Hofmann, who has retired after 20 years as Toledo manager.

\* \* \*

### AMF DeWalt

Charles M. Paes, Jr., has been appointed district sales manager for this Lancaster, Pa., manufacturer of radial arm wood and metal cutting machines. Mr. Paes will make his headquarters in St. Louis with responsibility for the sales territory of central Missouri, southern Illinois and southwestern Kentucky. He has been with the company since 1956 and has worked in sales promotion and training.

\* \* \*

### Pioneer Rubber Co.



J. E. Knight

The Industrial Products Division of this Willard, Ohio, glove manufacturer has announced that John E. Knight has been named North Central Area sales representative. Mr. Knight will cover 10 mid-western states. Prior to joining Pioneer he worked in the same

T. E. Read



area in a similar capacity for the Hood Rubber Company.

Pioneer Rubber Co. has named True E. Read as a special field representative. He was assistant sales manager for McKesson & Robbins, Inc., before joining Pioneer. Expanding market opportunities for the company require additional supervisory personnel.

\* \* \*

# TRADE PUBLICATIONS

These trade publications will keep you up-to-the-minute on new developments in safety equipment and health products. All catalogs are free, and will be sent without obligation. Just circle publication number on the Reader Service Postcard.



## Fluorescent Tube Changing Equipment

Bulletin describes and illustrates fluorescent tube changers. Also featured is a tube carrier which provides a new safe method of transporting fluorescent tubes. Pattern Products Co., P. O. Box 135-A, Union, N. J.

For more details circle No. 400  
on enclosed return postal card

## Floor-Maintenance Equipment & Supplies

Illustrated 4-page folder describes "everything for floor care"—scrubbing, waxing, polishing and mopping equipment; also waxes, sealers, and cleansers, with recommendations for use and packaging information. New items include a heavy duty vacuum cleaner (in baked enamel or stainless steel) with 1½ horsepower, 115 volts AC-DC by-pass motor and tank capacity of 12 gallons wet and 1¼ bushels dry. Finnell System, Inc., 2200 East St., Elkhart, Ind.

For more details circle No. 401  
on enclosed return postal card

## Hearing Protection

Industrial noise, its effect and recommended cures, plus a new approach to solving the hearing loss problem, are evaluated in an interesting illustrated book, titled "Why Must This Be?", available from Sigma Engineering Co., 1491 Vine St., Los Angeles 28, Calif.

For more details circle No. 402  
on enclosed return postal card

## Gas-Pointer

The Johnson-Williams Gas-Pointer is a portable unit for detecting and measuring natural gas concentrations in two ranges, 0-1.0 L.e.l. (lower explosion limit) and 0-100 per cent actual gas concentration. Just published is descriptive bulletin on this unit complete with specifications, diagrams and prices. Johnson-Williams, Inc., 2618 Park Blvd., Palo Alto, Calif.

For more details circle No. 403  
on enclosed return postal card

## Barrel-Lift

Catalog pages describing Morse Barrel-Lift, Model 80, for raising, transporting, rotating, tilting and draining a fully loaded 55-gallon steel drum. On reverse side of page, the Model 85 Drum-Karrier is described and illustrated. Demonstrates the safest and most dependable method of moving and hoisting 55-gallon drums via mono-rail and crane. Morse Mfg. Co., Inc., 727 W. Manlius St., East Syracuse, N. Y.

For more details circle No. 404  
on enclosed return postal card

## Safety Awards

Safety promotion with cigarette lighters is discussed in a new booklet: "How Zippro Lighters Are Used in a Safety Award Program." Lighters carry reminders which help maintain safety consciousness. The booklet features a case history. Zippro Mfg. Co., Bradford, Pa.

For more details circle No. 405  
on enclosed return postal card

## Ladders

The company's line of ladders is covered with illustrations, specifications in this 4-page brochure. Stepladders, platform ladders, heavy-duty industrial steel truss extension ladders, sectional ladders, painter's trestle steel truss ladders and extension planks are listed. The J. R. Clark Co., Spring Park, Minn.

For more details circle No. 406  
on enclosed return postal card

## Ears and Industry

This 6-page folder is a discussion of industrial hearing loss and a program for minimizing it. The folder discusses "What Is Noise"—"What Sound Levels are Injurious To The Ear"—"Why Audiometric Testing"—"What Is Audiometric Testing"—"How To Set Up A Testing Program"—"Types Of Hearing Loss." The Maico Co., Inc., 21 N. Third St., Minneapolis, Minn.

For more details circle No. 407  
on enclosed return postal card

## Safety Awards

Safety plaques, badges and pins in many styles and sizes are presented in a brochure available from Williams Jewelry and Manufacturing Co., 10 South Wabash Ave., Chicago 3, Ill. Each item is pictured along with a complete description including sizes, components and prices.

For more details circle No. 408  
on enclosed return postal card

## Safety Mirrors For Industrial Use

Safety mirrors designed for use in factories and warehouses where blind corners, cross-aisle intersections, entrances and exits present a safety problem because of traffic accidents are described in this bulletin. Fred Silver Co., 92 Lock St., Newark, N. J.

For more details circle No. 409  
on enclosed return postal card

## Padlocks for Industrial Protection

Catalog 56, 20-pages features descriptions of padlocks to meet every need, with actual size illustrations of entire line. Special long

shackle padlocks are included, as well as super security padlocks, which have an extra short shackle clearance of ½", and many others. Master Lock Co., Milwaukee 45, Wis.

For more details circle No. 410  
on enclosed return postal card

## Portable and Warning Lamps

Over 100 special-purpose electric lights are illustrated in this 8-page catalog. Items range from pistol-grip searchlights to rotating warning lights. Prices, specifications, illustrations. Carpenter Mfg. Co., Somerville, Mass.

For more details circle No. 411  
on enclosed return postal card

## Fire Fighting Systems

Foldout 8-pager shows how dangerous hazards, such as dip and quench tanks, chemical reactors, drying ovens, can be protected by fixed piping installations. Covers fog and foam sprinkler heads, related equipment. Rockwood Sprinkler Co., 38 Harlow St., Worcester, Mass.

For more details circle No. 412  
on enclosed return postal card

## Emergency Showers

Emergency Showers and Eye Wash Fixtures providing instant protection against effects of caustics, chemicals, fire, fumes and other injurious materials to the eye and body are illustrated and described in this catalog available from Speakman Company, Wilmington, Del. Complete specifications and diagrams included.

For more details circle No. 413  
on enclosed return postal card

## "Leader On A Frontier"

Facts about facilities for aeronautical and astronautic products, missile hardware plus warm air furnaces and industrial balers are featured in this 16-page, 2-color brochure . . . "Leader on a New Frontier." Pictorially, the brochure shows the diversity of operations in the Firewel plants, a short company history, a review of their many aeronautical achievements with Firewel oxygen breathing equipment, the variety of manufactured products (Oxygen regulators and systems, furnaces and balers). The Firewel Co., Inc., Dept. FW-A84, 3685 Broadway, Buffalo 25, N. Y.

For more details circle No. 414  
on enclosed return postal card

## Measuring Radioactivity

Bulletin CRM-11 describes the NMC Linear Count Ratemeter, designed to power GM, scintillation and proportional counting detectors, and to measure radioactivity sensed by them. It is said to be one of the most precise instruments of its kind, with an accuracy of plus or minus 1 per cent full scale reading. Agreement between



scales at the overlap-point is plus or minus 2 per cent. The bulletin also features five other NMC instruments for detection, measurement and recording of radioactivity. Nuclear Measurements Corp., 2460 N. Arlington Ave., Indianapolis 18, Ind.

For more details circle No. 415  
on enclosed return postal card.

### Flexolon Wire

A new bulletin offered by Tensolite Insulated Wire Co., West Main St., Tarrytown, N. Y., describes an extensive series of tests performed to illustrate advantages of new flexolon hook-up wire over wires of other construction. Individual tests were run on a sufficient number of random samples of flexolon wire and other types, selected from large lot sizes, to assure that results obtained were truly representative of extended manufacturing runs. The various samples were tested for flexibility, dielectric strength, concentricity, and average length. Tests are fully described and charts and graphs are included.

For more details circle No. 416  
on enclosed return postal card.

### Circular Serves as Floor Truck Selector Chart

A new circular to aid in the selection of 4-wheel floor trucks for a wide variety of special and standard materials handling jobs is now available from Lewis-Shepard Products, Inc., 125 Walnut St., Watertown 72, Mass. Designated as Circular 29-D, the chart describes and pictures some 52 different Lewis-Shepard floor trucks. Included are trucks with replaceable wooden decks, roller platforms, V-type decks, removable end and side racks, spring-loaded decks and steel shelving. In addition, the circular includes numerous special units to handle such items as food, cable reels, paper rolls, spindles or cones, garments, glass or sheet steel, as well as countless other types of materials and goods.

For more details circle No. 417  
on enclosed return postal card.

### D-C Contactors and Relays

GEA-6621 covers General Electric's complete line of d-c contactors and relays—and includes general purpose contactors, mill-type contactors, time delay contactors, general purpose relays, timing relays, instantaneous-overload relays, thermal-overload relays, field-loss relays, field accelerating and decelerating relays, and high drop-out relays. Extensive selection and application data is provided—including ordering instructions, full product descriptions and photographs of representative units by General Electric Co., Schenectady 5, N. Y.

For more details circle No. 418  
on enclosed return postal card.

### Machine Guards

Machine guards that keep press operators' hand from the danger zone, safe-guard them through positive action, yet don't hinder production and smooth operation, are covered in a new bulletin. The line covers virtually every press need, including punch, toggle, embossing, and special presses. Devices are also available for drop hammers. Positive Safety Mfg. Co., 4409 Perkins Ave., Cleveland 3, Ohio.

For more details circle No. 419  
on enclosed return postal card.

### Vision Tester

New bulletin describes and illustrates a precision built Stereoscopic Instrument for rapid and precise measurement of visual performance. The Titmus Vision Tester makes possible quick and accurate checking of important visual functions . . . to identify persons whose visual performance is below desirable standards. The bulletin

gives complete information on how these tests are given. Titmus Optical Co., Inc., Petersburg, Va.

For more details circle No. 420  
on enclosed return postal card.

### Basic Switches for Industrial and Commercial Applications

Micro Switch, Freeport, Ill., a Division of Minneapolis-Honeywell Regulator Co., has just published a 32-page Catalog No. 62c, describing and illustrating Basic Switches for industrial and commercial applications. Among the new switches described are the high-precision roller lever switch, which has extreme stability of characteristics; the adjustable actuator switch for convenient fine adjustment; and the "pulse" switch, which offers a means of securing electrical impulses without need for complicated actuating mechanisms. New mounting brackets and auxiliary actuators for Micro Switch basic switches have also been added.

For more details circle No. 421  
on enclosed return postal card.

### Industrial Television

Is a 4-page Bulletin 3-J-3255 that explains closed circuit TV and tells of many uses. Its industrial jobs range from direct observation and visual communication to group training. Radio Corporation of America, Front and Cooper Sts., Camden 2, N. J.

For more details circle No. 422  
on enclosed return postal card.

### Tally-Count

Tally-count, new predetermining electronic counter, automatically controls any industrial process involving high-speed counting. Manufactured by Standard Instrument Corp., 637 Broadway, New York 12, N. Y., Tally-count controls "batching," machine cycling, sorting, materials handling, packaging and unit flow at speeds higher than 100 a second. Fourteen-page brochure, gives complete specifications and wiring diagrams.

For more details circle No. 423  
on enclosed return postal card.

### Hydraulic Press Brakes

Catalog No. 2024-A describes the new line of Steelweld Hydraulic Press Brakes. Because Steelweld Brakes are hydraulically operated, they provide a number of important advantages such as: Positive overload protection; Ram reversible at any point; Stroke adjustment for any length; Fast ram approach and return with slow-speed pressing; Constant power during entire stroke. The catalog gives construction details and specifications on machines. Cleveland Crane and Engineering Co., Wickliffe, Ohio.

For more details circle No. 424  
on enclosed return postal card.

### Increased Heavy Duty Floor Life

How heavy duty industrial floors are finished or resurfaced with Cortland emery aggregate is described in an 8-page, two-color bulletin, now available from Walter Maguire Co., 60 E. 42nd St., New York, N. Y. Bulletin 653 offers clear specifications for preparing base slabs, mixing Cortland emery and cement and placing the Emerlcrete mix for monolithic and granolithic finishes. How to prepare old concrete floors for resurfacing or patching is explained and information on curing and protecting new or refinished surfaces is included. Estimating data, and tool and material requirements are also given.

For more details circle No. 425  
on enclosed return postal card.

### Electrical Equipment

A new 12-page pictorial bulletin briefly describes manufacturing facilities and elec-

trical products of Crouse-Hinds Co. Emphasis is on the variety of equipment available in the four product lines: Condulet electrical equipment, floodlights, aviation lighting equipment, and traffic control. Installation photos show these products in use. Crouse-Hinds Co., Syracuse 1, N. Y.

For more details circle No. 426  
on enclosed return postal card.

### Sling Chains

Accoloy Kuplex Sling Chains, with built-in factors of safety and strength, and designed to solve sling chain problems in the field as well as in industry through localized service, have been described in an information-packed, 8-page bulletin released by American Chain Division, American Chain and Cable Co., Inc., 929 Connecticut Ave., Bridgeport 2, Conn. In this Bulletin DH-39 are described the manufacturer's complete line of Kuplex Sling Chains in the 1, 2, 3 and 4' leg styles with sling hooks, sling grab hooks as well as foundry type hooks. The bulletin contains comprehensive data on selecting the proper chain size for individual requirements; working load limits for various leg styles and angles; basic components to assemble in a sling chain; and specific information on assembly and repair.

For more details circle No. 427  
on enclosed return postal card.

### Industrial Tractor Shovel

Yale Materials Handling Division of The Yale and Towne Manufacturing Co., 11,000 Roosevelt Blvd., Philadelphia 15, Pa., has published an informative, 20-page, two-color brochure on its Y-18 Industrial Tractor Shovel, which is designed to perform 25 per cent more work than comparable models. Among the many features discussed in detail in the booklet are such exclusive highlights as the fully automatic Yale Torque Transmission, for easy operation and high acceleration, Safety Curve Arms, 45 degree bucket tip back for better loading and a full six foot high dumping clearance. Two pages in the brochure are devoted to maintenance features of the unit.

For more details circle No. 428  
on enclosed return postal card.

### Rolling Scaffold Towers

Beaver-Advance Corp., Ellwood City, Penna., has made available a new illustrative Bulletin No. 66 which explains various applications of scaffold used as rolling towers and work staging for all types of interior and exterior maintenance and repair work.

For more details circle No. 429  
on enclosed return postal card.

### Liquid Level Control

Bulletin PF-571 describes and illustrates ECA Liquid Level Controls for universal industrial application. A concise selector guide is presented which will enable quick selection of the appropriate control system for liquid level applications. Two basic types of controls, electronic and electromagnetic, assure efficient operation and flexibility of use. Other features include low probe voltage, broad selection of probe types and materials, choice of resistivity ranges and universal supply voltages. Photoswitch Division, Electronics Corp. of America, One Memorial Drive, Cambridge 42, Mass.

For more details circle No. 430  
on enclosed return postal card.

### Safety Surfacing

A new folder which describes the latest types of industrial floor matting for providing safety and comfort underfoot has just been released by American Mat Corp., 1724

Adams St., Toledo 2, Ohio. Aside from telling how efficiency can be increased by reducing tension, the various types of matting are shown in actual use.

For more details circle No. 431  
on enclosed return postal card.

### Wire Rope Lubrication

Reducing wire rope cost by lengthening its life through proper lubrication is the subject of a new booklet issued by Union Wire Rope Corp., 2224 Manchester Ave., Kansas City 26, Mo. The 12-page pocket size book briefly summarizes why the construction of a wire rope necessitates lubrication, the lubricants recommended for different types of wire rope and operating conditions and how to apply lubrication in the field.

For more details circle No. 432  
on enclosed return postal card.

### F.E.M.A. Handbook of Safety Codes

The new F.E.M.A. Handbook of Safety Codes now available outlines procedures for maintaining, protecting, recharging, and inspecting fire extinguishing equipment commonly used. The 42-page brochure presents both mandatory and recommended procedures to be followed to assure long life and efficient service from portable fire extinguishers, carbon dioxide systems, stand-pipe and inside hose systems, and fixed foam systems. Fire Equipment Manufacturers' Assn., Inc., Suite 759, One Gateway Center, Pittsburgh 22, Pa.

For more details circle No. 433  
on enclosed return postal card.

### Reinforced Fiberglass Ladders

A brochure describing a new line of Reinforced Fiberglass Ladders has been made available, by Putnam Rolling Ladder Co., 32 Howard St., New York, N. Y. According to the manufacturer, the Reinforced Fiberglass Ladder is said to be the toughest and most durable ladder ever constructed. As an added safety feature, non-slip rungs are covered with grit-embedded neoprene. The brochure describes in detail a new idea in ladders—designed to meet the increasing needs of Chemical and Power Companies for a safe, lightweight, durable ladder that is non-conductive and resists chemical action.

For more details circle No. 434  
on enclosed return postal card.

### Materials Handling Equipment

Described in this 24-page catalog are manufacturer's complete line of institutional and industrial casters; special use dollies; platform trucks; light, medium and heavy duty hand trucks; lift jack systems; and institutional dish, tray, shelf and laundry trucks. Also included is the Colson hospital equipment line of inhalators; wheel chairs; orthopedic carts, wheeled stretchers; surgical carts and oxygen tank trucks. The Colson Corp., Jonesboro, Ark.

For more details circle No. 435  
on enclosed return postal card.

### Spectacle-Type Goggles

Bulletin containing 4-pages, describes the new Multi-Fit Spectacle-Type Goggles with the new Multi-Fit Bridge. According to the manufacturer, these new goggles greatly simplify fitting problems. The Multi-Fit's one bridge size is guaranteed to fit more than 90 per cent of your employees. You make no bridge adjustment; no need to try several sizes in individual fitting. Fendall Co., 4511 N. Lincoln Ave., Chicago 25, Ill.

For more details circle No. 436  
on enclosed return postal card.

### Sounds for Safety

Brochure describes and illustrates Falcon Manual Signal Horns for all emergency and

routine signalling for: Plant Evacuation, Timed Signals, Tank Entry, Liquid-Level Control and Fire Detection. Falcon Alarm Co., Inc., 243 Broad St., Summit, N. J.

For more details circle No. 437  
on enclosed return postal card.

### Utility Marking Outfit

Two-page circular illustrates company's Utility Marking Outfit. Eight type sizes, all interchangeable in Utility Holders, ranging from UH-1½ to UH-2½. Standard holder sizes and type capacities given. M. E. Cunningham Co., 1025 Chateau St., Pittsburgh 33, Pa.

For more details circle No. 438  
on enclosed return postal card.

### Motion Picture Projectors

Motion Picture Projectors (16mm) which can be set up by laymen in about 3 minutes, are illustrated in a new brochure. Picture clarity and excellent sound reproduction are emphasized. Radio Corp. of America, Audio-Visual Products, Camden 2, N. J.

For more details circle No. 439  
on enclosed return postal card.

### Self-Dumping Hoppers

A new brochure illustrates and describes complete line of self-dumping hoppers. Engineered for industrial truck handling, the hoppers can be used for wet or dry materials, either hot or cold. They are designed to provide peak handling efficiency and eliminate driver fatigue. Five models available with capacities from ½ yard to 2 yards are described. Apex Welding and Fabricating Corp., 30 Interstate St., Bedford, Ohio.

For more details circle No. 440  
on enclosed return postal card.

### Safety Shower

Bulletin describes an Automatic Emergency All-Weather Safety Shower and Eye Wash Fountain. Featured is the Model SO-101 Overhead Shower with 8" Baffle-Type Showerhead. Also shown are thermometer, three-way sign and vapor-proof night light. Platform grating of oak slats. A single door in rear can be furnished with tray to hold first-aid supplies. Morland Associates, 63 South Ave., Garwood, N. J.

For more details circle No. 441  
on enclosed return postal card.

### Fire Fighter Catalog

Metropolitan area and volunteer fire departments alike will find useful information in this new, 12-page fire fighter catalog L-1446, that features every unit in John Bean's extensive line of fire apparatus. A 65' Jr. Aerial Ladder "Quad," a new Squad and Rescue Unit, Jeep "first out" equipment, plus combination high pressure fog and volume pumps and hard-hitting high pressure fog fire apparatus—all are completely described with special features highlighted in the recently published catalog. John Bean Division, Food Machinery & Chemical Corp., Lansing 4, Mich.

For more details circle No. 442  
on enclosed return postal card.

### Magnesium Ladders

Bulletin containing 4 pages describes and illustrates Magnesium straight and extension ladders, ladder levelers, scaffolding, utility platforms, extension planks, step-ladders, platform stepladders, shelf ladders, etc. Sizes, weight and prices included. White Metal Rolling and Stamping Corp., 80 Moultrie St., Brooklyn 22, N. Y.

For more details circle No. 443  
on enclosed return postal card.

### Missing Links

Connecting hooks, swivels or rings to chain, or repairing chain, is now done

quickly and easily with the Crosby-Laughlin Missing Link. In a few seconds the halves of Missing Links are joined simply by peening together. The resulting connection is stronger than welding, safer than cold shuts or cast links. The drop forged, heat-treated halves of the Missing Link have integral rivets and interlocking lugs which evenly distribute the load throughout the link when joined. Missing Links offered in all popular chain sizes, from ½ to 1½ inch. Catalog No. 950-2 gives full details. Crosby-Laughlin Div., American Hoist and Derrick Co., Box 570, Ft. Wayne, Ind.

For more details circle No. 444  
on enclosed return postal card.

### Facts About Anchoring Your Machines with Unisorb

Special booklet presents "Facts About Anchoring Your Machines With Unisorb." Represents results of long study on engineering vibration control and isolation for all types of machinery. Booklet covers all types of general machinery and includes examples, case histories, cost reduction results, vibration studies and deflection curves. The Felt Co., Dept. WCH-210 South St., Boston 11, Mass.

For more details circle No. 445  
on enclosed return postal card.

### Hydrogen Zeolite Softener

Cochrane Corp., Philadelphia, Pa., announces the publication of a new 8-page Bulletin on the hydrogen zeolite process. Bulletin indicates advantages of the process, its chemistry and variations in methods for neutralizing mineral acidity of hydrogen zeolite effluent. Types of zeolites are discussed as well as relative advantages and disadvantages of various regenerants. Bulletin also contains a brief description of decarbonators.

For more details circle No. 446  
on enclosed return postal card.

### Fire Brick

Ceramic engineers, brickmason superintendents and others concerned with refractory maintenance and specifications in the ceramic, glass, metals, petroleum and marine industries will be interested in the firebrick technical data card now available from the Refractories Division of the Babcock and Wilcox Co., 161 E. 42nd St., New York 17, N. Y. The card, Bulletin R-52, summarizes all of the technical data published previously concerning B&W Firebrick, and has been specially printed on card stock and three-hole punched for easy inclusion in technical notebooks.

For more details circle No. 447  
on enclosed return postal card.

### Custom Forging

Twenty pages of invaluable forging data and information, embracing everything from proper die design through forging methods, trimming, cleaning and inspection featured in this Catalog F-1. Included in the catalog is a technical section on forging—complete with detailed illustrations and tables on such items as quantity tolerances, web thickness, corner radii tolerances, machining allowance and mismatch tolerances. Merrill Brothers, Caspian St., Maspeth, N. Y.

For more details circle No. 448  
on enclosed return postal card.

### Rail Fittings

You'll find many ways to speed up fence frame construction and cut down on erection costs with Nu-Rail Slip-On Fittings described and illustrated in Bulletin S-14 gives full details. The Hollander Mfg. Co., 3841 Spring Grove Ave., Cincinnati 23, Ohio.

For more details circle No. 449  
on enclosed return postal card.

### Safety Guard Inserts

Literature describes a new Safety Guard Insert for grinding wheels. This radically new Safety Guard Insert with its integrated revolving guard gives you the all-important safety factor with increased wheel strength and efficiency. Conforms to ASA Safety Code requirements for cupwheel guards. Carroll Pressed Metal Inc., 133 Dewey St., Worcester 10, Mass.

For more details circle No. 450  
on enclosed return postal card.

### Dry Abrasive Cutting Machine

A comprehensive and informative 4-page folder, DH-106, describes the Model 1-A Sever-All Dry Abrasive Cutting Machine. This completely new cutter, according to manufacturer, cuts practically all metals: Solids up to 2 in. square, pipe and tubing up to 3½ in. O.D., angle iron up to 3x3 in. and channels up to 4 in. Specifications such as rated capacity, power required, cutting wheel diameter, dimensions and weights are listed. Allison-Campbell Div., American Chain & Cable Co., Bridgeport 2, Conn.

For more details circle No. 451  
on enclosed return postal card.

### Underfoot Safety:

Folder, well-illustrated, presents traction problems and tells how to solve them. Promotes safety through sure footing on wet, dry or oily surfaces. Describes uses on many danger spots, plus ease of application. American Abrasive Metals Co., 460 Coit St., Irvington, N. J.

For more details circle No. 452  
on enclosed return postal card.

### Tread Plate

Applications and fabricating data are given in eight-page booklet on abrasive tread plate. Includes table of design data and sketches of suggested safety applica-

tions for this non-skid, corrosion-resistant flooring material. Aluminum Company of America, 1671-F, Alcoa Bldg., Pittsburgh 19, Pa.

For more details circle No. 453  
on enclosed return postal card.

### Rubber Gloves:

Catalog WR-656-75-J, 16-pages, describes and illustrates industrial gloves and finger cots of rubber, latex, Neoprene, Buna-N, and plastic. Tells how to select gloves. Tables show suitability of gloves for variety of materials. The Wilson Rubber Co., 1200 Garfield Ave., S. W., Canton 6, Ohio.

For more details circle No. 454  
on enclosed return postal card.

### Sirens and Lights:

Warning signals for cranes and shop trucks are described and illustrated in Catalog 100. Sirens and lights are capable of saving lives as well as expense, the catalog reminds. Federal Sign and Signal Corp., 8725 S. State St., Chicago, Ill.

For more details circle No. 455  
on enclosed return postal card.

### Safety Signs:

Preventive safety is underscored in company's new catalog, which details the firm's line of more than 2,000 stock wordings. In addition, of course, special signs are made to order. Ready Made Sign Co., Inc., 115 Worth St., New York, N. Y.

For more details circle No. 456  
on enclosed return postal card.

### Fume Collector:

Bulletin No. 37E discusses a method of stopping welding fumes at their source. The bulletin also discusses the direct benefits of fume abatement in terms of safety, increased production, and satisfactory personnel relations. Ruemelin Mfg. Co., 3885 N. Palmer St., Milwaukee, Wis.

For more details circle No. 457  
on enclosed return postal card.

### Protective Clothing:

Head-to-toe, foul-weather protection featured in its newly introduced line of polyvinyl chloride-impregnated North PVC garments is described in a new bulletin published by Jomac, Inc., Philadelphia 38, Pa. The bulletin reviews and illustrates the company's new all-weather protective clothing for personnel engaged in outside occupations. The impregnated outerwear is ideal for policemen and firemen, maintenance workers and guards, construction and pipeline workers, farmers and telephone, gas and electric utility repairmen. The new line, shown in photos and sketches in the bulletin, include three basic garments: a full-length coat, overalls and a short coat usually worn with overalls. The bulletin also describes available accessories, such as patch pockets, special vents and adjustable or elastic storm cuffs.

For more details circle No. 458  
on enclosed return postal card.

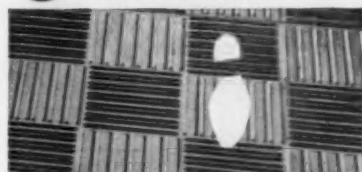
### Silent Chain Drives:

(Book 2425), available from Link-Belt Co., Dept. P. R., Prudential Plaza, Chicago 1, Ill., contains 88 pages of detailed engineering data and illustrations of the versatility of silent chains in a wide range of applications. The book also contains tables of service factors, ratings, chain lengths and center distance computations. Pre-engineered stock drives are listed and a 22-page section outlines procedures for selections of engineered drives.

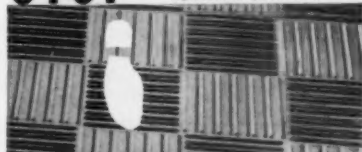
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Circle Item No. 88—Reader Service Card

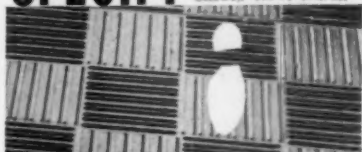
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National Safety News, September, 1958



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**Index to Advertisers**

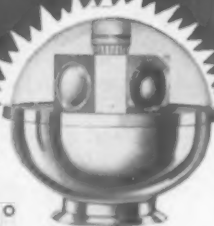
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Circle Item No. 97—Reader Service Card

National Safety News, September, 1958



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## New Safety Equipment

—shown in the special section has been carefully reviewed. Only new products or new, worthy improvements in existing equipment are considered eligible for this section.

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National Safety News, September, 1958

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SEPTEMBER, 1958

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*National Safety News, September, 1958*

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Reader Service Department

**NATIONAL SAFETY NEWS**

425 NORTH MICHIGAN AVENUE

CHICAGO 11, ILLINOIS

# CESCO

the only one that's  
years ahead in safety,  
style, and comfort!



## Plastic and Metal Frame Glasses

These new open-type safety glasses give your workers all the features they want most... smart styling plus on-the-job utility. Long-wearing plastic and metal frame makes them an economical safety equipment choice because lenses can be replaced separately. All-in-one plastic section does double duty as lens rim and Comfort Bridge pad. Provides full closure at nose section and is unaffected by skin oils and cleaning agents.

In 2 Sizes • 46 x 39mm (No. 326)  
48 x 41mm (No. 328)

Shape of Lens • F-7 in clear and anti-glare safety glass and clear Cescolite plastic

4 Bridge Sizes • 20, 22, 24 and 26 mm

**ASK** your distributor to show you his complete line of CESCO head and eye protective equipment. There's a CESCO distributor located in most major cities coast-to-coast.

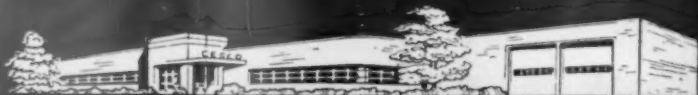
## Plastic and Metal Frame Glasses with Side Shields

The No. 336 plastic and metal frame glasses offer the same outstanding features as the glasses described above plus wire mesh side shields. Available in 2 sizes: 46 x 39mm and 48 x 41mm.



CESCO

CESCO FOR SAFETY



THE CESCO COMPANY  
1000 N. 1st St., Chicago, Ill.

# It's **NEW...** *Another AO Respiratory "First!"* the **"RED DEVIL"** **Filter**



## **The Revolutionary R-90 "Red Devil"** **Variable Density Filter for the** **AO R-2090 Respirator**

Bureau of Mines Approval 2172 for Protection against all dusts not significantly more toxic than lead — BM 2172.

The R-90 filter represents the greatest technical advance in respirators since American Optical introduced "impregnated (electrostatic) felt" in our R-25 filters. These widely copied filters must now give way to continuing AO research and progress. The R-90 Red Devil is available only from AO — provides amazingly high filtering efficiency, plus very low breathing resistance . . . and unusually long service life because of a built-in prefilter. Additional approvals of this amazing filter are expected soon, (re pneumoconiosis-producing mists and chromic acid mists). Act **TODAY** — equip personnel with the AO R-2090. Avoid attempted imitations — insist on AO "Red Devil" filters and respirator! Filters available in package of 5 or package of 50.

### **Quick Facts**

- Fibrous filter. Interlocked microfine synthetic fibers on which ultrafine asbestos fibers are dispersed.
- New "Air Floatation" process forms the medium.
- Concentration gradient of ultrafine asbestos fibers insure higher filtering efficiency, lower breathing resistance and longer service life.
- All fibers bonded together by special fusion process.
- Precision AO built-in red prefilter for positive identification and thermally bonded to main filter for extra long service life.
- Compact and lightweight — 3" dia., 1/5" thick. 1/300 of an ounce.

**WRITE FOR ADDITIONAL INFORMATION**



*Always insist on  
 AO Trademarked  
 Safety Products.*

**SOUTHBRIDGE, MASS.**  
*Safety Service Centers  
 in Principal Cities*

1833-1958 • 125 LEADERSHIP YEARS

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